



# San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



OCT 19 2015

Mr. Darin Bratsman  
Equilon Enterprises LLC  
2555 13<sup>th</sup> Avenue SW  
Seattle, WA 98134

**Re: Proposed Authority to Construct/Certificate of Conformity (Minor Mod)**  
**District Facility # N-758**  
**Project # N-1152727**

Dear Mr. Bratsman:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project is for the modification of the existing 689,136 gallon external floating roof storage tank, under permit unit N-758-14 to install a geodesic dome.

After addressing all comments made during the 45-day EPA comment period, the District intends to issue the Authority to Construct with a Certificate of Conformity. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Nick Peirce, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

Sincerely,

Arnaud Marjollet  
Director of Permit Services

Enclosures

cc: Gerardo C. Rios, EPA (w/enclosure) via email

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# San Joaquin Valley Air Pollution Control District Authority to Construct

## *Modification of Storage Tank #18*

Facility Name:	Equilon Enterprises LLC	Revised Date:	October 7, 2015
Mailing Address:	2555 13 <sup>th</sup> Avenue SW	Engineer:	Wai-Man So
	Seattle, WA 98134	Lead Engineer:	Nick Peirce
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Application #(s):	N-0758-14-6		
Project #:	N-1152727		
Deemed Complete:	August 14, 2015		

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### **I. PROPOSAL**

Equilon Enterprises LLC (hereinafter Equilon) is requesting an Authority to Construct permit for the modification of the existing 689,136 gallon gasoline/denatured ethanol/diesel storage tank, under permit unit N-758-14 to install a geodesic dome on the existing external floating roof tank.

The facility has submitted an ATC application under project N-1151912 to modify this existing tank to store biodiesel in addition to the previously permitted storage of various organic materials. The facility also proposed to install a mixer to the tank to blend regular diesel and biodiesel products under the same project. Therefore, the following condition will be listed on the new ATC as follows:

- Authority to Construct N-758-14-5 shall be implemented prior to, or concurrently with this Authority to Construct. [District Rule 2201]

Tesoro possesses a Title V permit. The proposed project is a Minor Modification to the Title V permit per section 3.20 of District Rule 2520. The applicant has requested to issue the ATC with a Certificate of Conformity (COC), which is EPA's 45-day review of the project prior to the issuance of the final ATC. Equilon must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modification.

## II. APPLICABLE RULES

- District Rule 2201 New and Modified Stationary Source Review Rule (04/21/11)  
District Rule 2410 Prevention of Significant Deterioration (effective 11/26/12)  
District Rule 2520 Federal Mandated Operating Permits (06/21/01)  
District Rule 4001 New Source Performance Standards (04/14/99):
- 40 CFR Part 60 Subpart K – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage vessels) for Which Construction, Reconstruction, or Modification Commenced after June 11, 1973, and Prior to May 19, 1978
  - 40 CFR Part 60 Subpart Ka – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage vessels) for Which Construction, Reconstruction, or Modification Commenced after May 18, 1978, and Prior to July 23, 1984
  - 40 CFR Part 60 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984
- District Rule 4002 National Emission Standards for Hazardous Air Pollutants (05/20/04):
- 40 CFR Part 63 Subpart R – Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)
  - 40 CFR Part 63 Subpart BBBB – Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities
- District Rule 4101 Visible Emissions (02/17/05)  
District Rule 4102 Nuisance (12/17/92)  
District Rule 4623 Storage of Organic Liquids (05/19/05)  
CH&SC 41700 Health Risk Assessment  
CH&SC 42301.6 School Notice  
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

## III. PROJECT LOCATION

The facility is located at 3515 Navy Drive in Stockton, California. The District has verified that this facility is not located within 1,000 feet of the outer boundary of any K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

## IV. PROCESS DESCRIPTION

Except to make a physical change to the existing aboveground storage tank, no change to the operating procedure is proposed. See detail process description in engineering evaluation under project N-1123247.

## **V. EQUIPMENT LISTING**

As discussed in the proposal section, the pre-project equipment description for this project will be listed as follows:

### ***Pre-Project Equipment Description:***

ONE 689,136 GALLON (16,408 BBL) ABOVEGROUND WELDED EXTERNAL FLOATING ROOF GASOLINE/DENATURED ETHANOL/DIESEL/BIODIESEL STORAGE TANK (TANK #18) WITH A MIXER, A MECHANICAL SHOE TYPE PRIMARY SEAL AND A SECONDARY WIPER SEAL

### ***Post-Project Equipment Description:***

ONE 689,136 GALLON (16,408 BBL) ABOVEGROUND DOMED AND WELDED EXTERNAL FLOATING ROOF GASOLINE/DENATURED ETHANOL/DIESEL/BIODIESEL STORAGE TANK (TANK #18) WITH A MIXER, A MECHANICAL SHOE TYPE PRIMARY SEAL AND A SECONDARY WIPER SEAL

## **VI. EMISSION CONTROL TECHNOLOGY EVALUATION**

This existing external floating roof tank is currently equipped with a mechanical shoe primary seal and a secondary wiper seal to control VOC emissions. A new geodesic dome will be installed to this existing external floating roof tank as a result of this project. As demonstrated in potential emission calculations section below, a domed external floating roof tank will provide a better control of VOC emissions from the existing storage tank.

## **VII. GENERAL CALCULATIONS**

### **A. Assumptions**

- VOC is the only emitted criteria pollutant associated with this project.
- Assumption will be stated when each is made.

### **B. Emission Factors**

#### ***Pre-Project Emission Factors (EF1) & Post-Project Emission Factors (EF2)***

The VOC emission from this tank will be determined using EPA's Tanks 4.0.9.d software program, and therefore, a separate emissions factor will not be listed.

### C. Potential to Emit (PE) Calculations

#### 1. Daily and Annual PE

EPA's Tanks 4.0.9d program was used to calculate the pre-project and post-project potential emissions from this existing 689,136 gallon aboveground storage tank. Emissions from the tank include both working loss emissions and breathing loss emissions. See detail pre-project and post-project potential emissions reports in Appendix III and Appendix IV of this document respectively.

##### ***Pre-Project Potential to Emit (PE1)***

This tank will be used to store gasoline, denatured ethanol, diesel, and biodiesel. Storing gasoline would result in the highest amount of emissions as opposed to others materials being allowed to store in this tank.

##### Daily Emissions

From the EPA's Tanks program report, the highest emissions occur in the month of June with 814.0 pounds of VOC. The daily emissions are then calculated as follows:

$$\text{Daily PE1} = 814.0 \text{ lb-VOC} \div 30 \text{ day} = 27.1 \text{ lb-VOC/day}$$

##### Annual Emissions

From the EPA's Tank program report, the annual emissions are 6,352 pounds of VOC per year.

The pre-project daily and annual potential emissions are summarized in the table below:

Pollutant	Daily PE1 (lb/day)	Annual PE1 (lb/year)
VOC	27.1	6,352

##### ***Post-Project Potential to Emit (PE2)***

The applicant is proposing to install a geodesic dome on the top of the existing external floating roof tank that results in decrease of emissions.

##### Daily Emissions

From the EPA's Tanks program report, the highest emissions occur in the month of July with 196.6 pounds of VOC. The daily emissions are then calculated as follows:

$$\text{Daily PE2} = 196.6 \text{ lb-VOC} \div 31 \text{ day} = 6.3 \text{ lb-VOC/day}$$

### Annual Emissions

From the EPA's Tanks program report, the annual emissions are 1,417 pounds of VOC per year.

The post-project daily and annual potential emissions are summarized in the table below:

Pollutant	Daily PE2 (lb/day)	Annual PE2 (lb/year)
VOC	6.3	1,417

### **2. Quarterly Net Emissions Change**

This calculation is required for application's emission profile, which is used for the District's internal tracking purposes. The emissions will be evenly distributed throughout the year as follows:

$$\text{QEC (lb/quarter)} = [\text{Annual PE2} - \text{Annual PE1}] (\text{lb/year}) / 4 (\text{quarter/year})$$

The QEC summarized in the table below:

Pollutant	Quarterly Emission Changes (QEC)			
	1 <sup>st</sup> Quarter (lb/quarter)	2 <sup>nd</sup> Quarter (lb/quarter)	3 <sup>rd</sup> Quarter (lb/quarter)	4 <sup>th</sup> Quarter (lb/quarter)
VOC	-1,233	-1,233	-1,233	-1,234

### **3. Adjusted increase in Permitted Emissions (AIPE)**

AIPE is used to determine if Best Available Control Technology (BACT) is required for emission units that are being modified. AIPE shall be calculated utilize equations listed in this Rule Section 4.3 and 4.4 as follows:

$$\text{AIPE} = \text{PE2} - \text{HAPE}$$

Where,

AIPE = Adjusted Increase in Permitted Emissions, pounds per day

PE2 = the emissions units post project Potential to Emit, pounds per day

HAPE = the emissions unit's Historically Adjusted Potential to Emit, pounds per day

$$\text{HAPE} = \text{PE1} \times (\text{EF2}/\text{EF1})$$

Where,

PE1 = the emissions unit's Potential to Emit prior to modification or relocation

EF2 = the emissions unit's permitted emission factor for the pollutant after modification or relocation. If PE2 is greater than EF1 then EF2/EF1 shall be set to 1.

EF1 = the emissions unit's permitted emission factor for the pollutant before the modification or relocation.

Then,  $AIPE = PE2 - [PE1 \times (EF2/EF1)]$

As discussed in Section VII.C.1 of this document, the potential VOC emissions from this tank will be determined using EPA's Tanks 4.0.9.d software program. As shown in the Tanks program reports, the EF2 and PE2 from the components, such as rim seal, roof fitting, hatch, and guide pole is each either equal to or less than the EF1 and PE1. Therefore, AIPE will not exceed 2.0 lb-VOC/day.

#### D. Facility Emissions

##### 1. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

Except permit unit is modified under this project, SSPE1 values are taken from engineering evaluation under project N-1123247.

Permit Number	Pollutant (lb/year)				
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
N-758-1-1	0	0	0	0	297
N-758-2-1	0	0	0	0	353
ATC N-758-3-4	0	0	0	0	26,600
ATC N-758-7-4					
N-758-4-5	0	0	0	0	2,768
N-758-5-5	0	0	0	0	3,742
N-758-6-2	0	0	0	0	6,583
N-758-9-1	0	0	0	0	0
N-758-10-2	0	0	0	0	0
ATC N-758-11-3	0	0	0	0	283
N-758-13-9	0	0	0	0	25,042
ATC N-758-14-5	0	0	0	0	6,352
N-758-15-1	0	0	0	0	9
N-758-16-0	0	0	0	0	1,804
ERC	0	0	0	0	0
SSPE1	0	0	0	0	73,833

## 2. Post-Project Stationary Source Potential to Emit (SSPE2)

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

Permit Number	Pollutant (lb/year)				
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
N-758-1-1	0	0	0	0	297
N-758-2-1	0	0	0	0	353
ATC N-758-3-4	0	0	0	0	26,600
ATC N-758-7-4					
N-758-4-5	0	0	0	0	2,768
N-758-5-5	0	0	0	0	3,742
N-758-6-2	0	0	0	0	6,583
N-758-9-1	0	0	0	0	0
N-758-10-2	0	0	0	0	0
ATC N-758-11-3	0	0	0	0	283
N-758-13-9	0	0	0	0	25,042
<b>ATC N-758-14-6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,417</b>
N-758-15-1	0	0	0	0	9
N-758-16-0	0	0	0	0	1,804
ERC	0	0	0	0	0
SSPE2	0	0	0	0	68,898

## 3. Stationary Source Increase in Permitted Emissions (SSIPE)

SSIPE calculations are used to determine if the project triggers public notice pursuant to District Rule 2201, § 5.4.5. If SSIPE results greater than 20,000 lb/yr for any one pollutant then project requires public notification. At this time, it is District Practice to define the SSIPE as the difference of SSPE2 to SSPE1, and calculated by the following equation:

$$\text{SSIPE (lb/yr)} = \text{SSPE2 (lb/yr)} - \text{SSPE1 (lb/yr)}$$

SSIPE	Pollutants (lb/yr)				
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE2	0	0	0	0	68,898
SSPE1	0	0	0	0	73,833
SSIPE <sup>1</sup>	0	0	0	0	0

As shown above, SSIPE is equal to zero for VOC, the only pollutant associated with this project.

<sup>1</sup> Per District practice, negative SSPE value is set equal to zero.



#### 4. Major Source Determination

##### Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- emissions from non-road IC engines (i.e. IC engines at a particular site at this facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)						
	NO <sub>x</sub>	SO <sub>x</sub>	PM10	PM2.5	CO	VOC
SSPE1 without ERC	0	0	0	0	0	73,833
SSPE2 without ERC	0	0	0	0	0	68,898
Major Source Threshold	20,000	140,000	140,000	200,000	200,000	20,000
Major Source	No	No	No	No	No	Yes

Note: PM2.5 assumed to be equal to PM10

As seen above, this facility is an existing Major Source for VOC emissions and will remain a Major Source for VOC. No change in other pollutants are proposed or expected as a result of this project.

##### Rule 2410 Major Source Determination:

The facility or equipment evaluated under this project is listed as one of the categories specified in 40 CFR 52.21(b)(1)(iii). Therefore, the PSD Major Source threshold is 100 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Estimated Facility PE before Project Increase	0	36.9	0	0	0	0
PSD Major Source Thresholds	100	100	100	100	100	100
Existing PSD Major Source ? (Y/N)	N	N	N	N	N	N

As shown above, the facility is not an existing PSD Major Source for any regulated NSR pollutant expected to be emitted at this facility.

## 5. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

Otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

This facility is a Major Source for VOC emissions, and as determined in project N-1123247, this existing emission unit is considered a Clean Emissions Unit. Therefore, BE is equal to PE1 of 6,352 lb-VOC/year.

## 6. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

As shown in Section VII.D.4 of this document, this facility is an existing Major Source for VOC emissions. Therefore, the project's PE2 is compared to the SB 288 Major Modification Thresholds in order to determine if the SB 288 Major Modification calculation is required.

As shown in Section VII.C.1 of this document, the PE2 for this project itself is equal to 1,539 pounds of VOC per year.

SB 288 Major Modification Thresholds (Existing Major Source)			
Pollutant	Project's PE (lb/year)	Thresholds (lb/year)	SB 288 Major Modification Calculation Required?
VOC	1,417	50,000	No

As indicate above, the SB 288 Major Modification Threshold for VOC is not surpassed with this project, this project does not constitute an SB 288 Major Modification.

## 7. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. Emission decreases may not cancel out the increases for this determination.

For existing emissions units, the increase in emissions is calculated as follows.

$$\text{Emission Increase} = \text{PAE} - \text{BAE} - \text{UBC}$$

Where: PAE = Projected Actual Emissions, and  
BAE = Baseline Actual Emissions  
UBC = Unused baseline capacity

This project does not result in an increase in design capacity or potential to emit, and it does not impact the ability of the emission unit to operate at a higher utilization rate; therefore, the UBC is the portion of PAE that the emission unit could have accommodated during the baseline period. As such, there is no emission increase pursuant to District draft SB 288 and Federal Major Modification Policy.

As shown in Section VII.C.3 of this document, the project's combined total emission increases are calculated to zero for each pollutant, and compared to the Federal Major Modification Thresholds in the following table.

Federal Major Modification Thresholds for Emissions Increases			
Pollutant	Total Emissions Increase (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NOx	0	0	No
VOC	0	0	No
PM10	0	30,000	No
PM2.5	0	20,000	No
SOx	0	80,000	No

Since none of the Federal Major Modification Thresholds are being surpassed with this project, this project does not constitute a Federal Major Modification and no further analysis is required.

## 8. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV are: (See 52.21 (b) (23) definition of significant).

The equipment associated to this project emits only VOC emissions.

The facility or the equipment evaluated under this project is listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). The PSD Major Source threshold is 100 tpy for any regulated NSR pollutant.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Total PE from the modified unit	0	0.71	0	0	0	0
PSD Major Source Thresholds	100	100	100	100	100	100
New PSD Major Source ? (Y/N)	N	N	N	N	N	N

As shown in the table above, the project potential to emit for the project, by itself, does not exceed any PSD Major Source thresholds. Therefore Rule 2410 is not applicable and no further analysis is required.

## VIII.COMPLIANCE

### District Rule 2201 New and Modified Stationary Source Review Rule

#### 1. Best Available Control Technology (BACT)

##### A. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following\*:

- Any new emissions unit with a potential to emit exceeding two pounds per day,
- The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- Modifications to an existing emissions unit with a valid Permit to Operate resulting in an APE exceeding two pounds per day, and/or
- Any new or modified emissions unit, in a stationary source project, which results in a Major Modification.

\*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

As shown in Section I of this document, the facility is proposing to modify the existing permit unit N-758-14. Additionally, as determined in Sections VII.D.6 and VII.D.7 of this document, this project does not result in an SB 288 Major Modification or Federal Major Modification. Therefore, BACT can only be triggered if the AIPE exceeds 2.0 lb/day for the modified unit.

As discussed in Section VII.C.3 of this document, the modified unit emits only VOC emissions, and the AIPE is not greater than 2.0 lb-VOC/day. Therefore, BACT is not triggered for this unit.

## 2. Offsets

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE2	0	0	0	0	68,898
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offset Triggered?	No	No	No	No	Yes

As seen above, the facility is an existing Major Source for VOC and the SSPE2 is greater than the offset thresholds. Therefore offset calculations will be required for this project.

The quantity of offsets in pounds per year for VOC is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) =  $(\Sigma[PE2 - BE] + ICCE) \times DOR$ , for all new or modified emissions units in the project,

Where,

PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

BE = HAE

As discussed in Section VII.D.5 above, the BE from this unit are equal to the PE1 since the unit is a Clean Emissions Unit. In addition, there is only one emissions unit associated with this project, and there are no increases in cargo carrier emissions so ICCE is equal to 0, and DOR is equal to 1. Thus,

$$\begin{aligned}\text{Offsets Required (lb/year)} &= ([\text{PE2} - \text{BE}] + \text{ICCE}) \times \text{DOR} \\ &= ([1,417 - 6,352] + 0) \times 1 \\ &= -4,935 \text{ lb-VOC/year}\end{aligned}$$

As shown above, offset will not be required for this project.

### **3. Public Notification**

District Rule 2201, § 5.4, requires a public notification for the affected pollutants from the following types of projects:

#### **a) New Major Source, Federal Major Modification, and SB 288 Major Modification**

This facility is not becoming a new major source, and the proposed project will trigger neither Federal Major Modification nor SB 288 Major Modification. Therefore, public noticing for these purposes is not required.

#### **b) New emission unit with PE > 100 lb/day for any one pollutant**

There is no new emission unit with PE > 100 lb/day as a result of this project. Therefore, public noticing for this purpose is not required.

#### **c) Modifications with SSPE1 below an Offset threshold and SSPE2 above an Offset threshold on a pollutant-by-pollutant basis**

The proposed project does not result in SSPE from below offset threshold level to above offset threshold level for any one pollutant. Therefore, public noticing for this purpose is not required.

#### **d) New stationary sources with SSPE2 exceeding Offset thresholds**

There is no new stationary source with SSPE2 exceeding offset thresholds as a result of this project. Therefore, public noticing for this purpose is not required.

#### **e) Any permitting action with an SSIPE exceeding 20,000 lb/year for any one pollutant**

The proposed project does not result in SSIPE exceeding 20,000 lb/year for any one pollutant. Therefore, public noticing for this purpose is not required.

As discussed above, public notification will not be required for these purposes.

#### **4. Daily Emission Limits (DELs)**

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. Therefore, the following conditions will be listed on the permit to ensure compliance:

- *VOC emissions from this tank shall not exceed 6.3 pounds in any one day. [District Rule 2201]*
- *VOC emissions from this tank shall not exceed 1,417 pounds in any 12 consecutive month rolling period. [District Rule 2201]*
- *Throughput of organic liquid for this tank shall not exceed any of the following limits: 698,136 gallons/day, 20,961,220 gallons/month and 50,952,827 gallons/year based on a 12-month rolling basis. [District Rule 2201]*

#### **5. Compliance Assurance**

##### **a. Source Testing**

No source testing is required to demonstrate compliance with Rule 2201.

##### **b. Monitoring**

No monitoring is required to demonstrate compliance with Rule 2201.

##### **c. Recordkeeping**

Recordkeeping is required to demonstrate compliance with the offset, public notification, and daily emission limit requirements of Rule 2201. Therefore, the following conditions will be listed on the permit to ensure compliance:

- *The permittee shall maintain records of daily, monthly and annual (12-month rolling total) organic liquid throughput in gallons. [District Rule 2201]*
- *The permittee shall maintain all records required by this permit for a period of at least five years and shall make them readily available for District inspection upon request. [District Rules 2201 and 4623, and 40 CFR 63.11094(a)]*

##### **d. Reporting**

No reporting is required to ensure compliance with Rule 2201.

Compliance with the requirements of this rule is expected.

### **District Rule 2410 Prevention of Significant Deterioration**

As demonstrated in Section VII.D.8 of this document, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

### **District Rule 2520 Federally Mandated Operating Permit**

Equilon possesses a Title V Operating Permit. The proposed modification is considered a Minor Modification to the Title V Permit. In accordance with Rule 2520, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
  - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
  - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

As discussed above, the facility has applied for a Certificate of Conformity (COC). Therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility may construct/operate under the ATC upon submittal of the Title V administrative amendment application. Therefore, the following conditions will be listed on the permit:

- {1830} *This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201]*
- {1831} *Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4]*



In accordance with Rule 2520, the application meets the procedural requirements of section 11.4 by including:

- A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs and
- The source's suggested draft permit (Appendix I of this document) and
- Certification by a responsible official that the proposed modification meets the criteria for use of major permit modification procedures and a request that such procedures be used (Appendix V of this document)

Section 5.3.4 of this rule requires the permittee shall file an application for administrative permit amendments prior to implementing the requested change except when allowed by the operational flexibility provisions of section 6.4 of this rule.

Equilon is expected to notify the District by filing the appropriate application forms prior to commencing operation. Therefore, compliance with the requirements of this Rule is expected.

#### **District Rule 4001 New Source Performance Standards (NSPS)**

##### **40 CFR Part 60 Subpart K – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage vessels) for Which Construction, Reconstruction, or Modification Commenced after June 11, 1973, and Prior to May 19, 1978**

§60.110(c)(2) states the affected facility with a storage vessel for petroleum liquids that has a capacity greater than 246,052 liters (65,000 gallons) and commences construction or modification after June 11, 1973, and prior to May 19, 1978.

The capacity of the modified storage tank is 689,136 gallon (equivalent to 1,295.7 m<sup>3</sup>), and was determined in engineering evaluation under District project N-1111745, this existing storage tank was installed in 1953.

§60.15(b) defines reconstruction as the replacement of components of an existing facility to such an extent that: the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility.

§60.14(b) defines modification as any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification.

The proposed storage tank has not been reconstructed and/or modified as defined in both §60.14(b) and §60.15(b) sections since it was installed in 1953 until May 19, 1978. Therefore, the requirements of this subpart do not apply to this permit unit, and no further discussion will be required.

**40 CFR Part 60 Subpart Ka – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage vessels) for Which Construction, Reconstruction, or Modification Commenced after May 18, 1978, and Prior to July 23, 1984**

§60.110a(a) states except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than 151,416 liters (equivalent to 40,000 gallons) that is used to store petroleum liquids for which construction is commenced after May 18, 1978.

The proposed storage tank has not been reconstructed and/or modified as defined in both §60.14(b) and §60.15(b) sections since it was installed until July 23, 1984. Therefore, the requirements of this subpart do not apply to this permit unit, and no further discussion will be required.

**40 CFR Part 60 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage vessels) for Which Construction after July 23, 1984**

§60.110b(a) states except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (m<sup>3</sup>) (equivalent to 39,890 gallons) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.

The proposed storage tank has not been reconstructed and/or modified as defined in both §60.14(b) and §60.15(b) sections since it was installed in 1953 until the last permitting action under District project N-1151912 in 2015.

In addition, the cost of the installation of a geodesic dome under this project will be significantly less than 50 percent of the fixed capital cost to construct a comparable entirely new facility. Furthermore, the proposed project does not result in an increase in emissions of any air pollutants. Therefore, the requirements of this subpart do not apply to this permit unit, and no further discussion will be required.

**District Rule 4002 National Emissions Standards for Hazardous Air Pollutants**

**40 CFR Part 63 Subpart R – Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)**

It was determined in engineering evaluation under District project N-1111745 that the potential emissions from this facility are less than 10 tons per year for any single hazardous air pollutant (HAP) and 25 tons per year for combined HAPs. This project will not result in an increase in HAP emissions that would affect the previous determination. Therefore, the requirements of this subpart do not apply to this facility, and no further discussion will be required.

**40 CFR Part 63 Subpart BBBBBB – Gasoline Distribution Facilities (Bulk Gasoline Terminal and Pipeline Breakout Stations)**

§63.11081(a) states that the affected source to which this subpart applies is each area source bulk gasoline terminal, pipeline breakout station, pipeline pumping station, and bulk gasoline plant.

§63.11100 defines that a bulk gasoline terminal means any gasoline storage and distribution facility that receives gasoline by pipeline, ship or barge, or cargo tank and has a gasoline throughput of 20,000 gallons per day or greater.

It was determined in engineering evaluation under District project N-1111745 that this existing external floating roof tank is subjected to the requirements of this subpart.

The facility is proposed to install a geodesic dome on this external floating roof tank. According to the EPA document in the Appendix VI of this document, if an external floating roof tank which is enclosed by the installation of a fixed roof meets the 40 CFR 60 Subpart Kb description of an internal floating roof tank; it is subject to the requirements for internal floating roof tanks. The enclosed external floating roof tanks are no longer subject to the Subpart Kb requirements for external floating roof tanks.

Therefore, the proposed 689,136 domed external floating roof tank, under permit unit N-758-14 will be subjected to the internal floating roof tank requirements as a result of this project.

§63.11083(b) states an existing affected source must comply with the standards in this subpart no later than January 10, 2011.

The facility submitted the Notification to Compliance Status to the Administrator and District on March 07, 2011 stating that the facility is in compliance with the requirements of this subpart at the time the Initial Notification was due on January 10, 2011. Therefore, compliance with the requirements of this section is expected.

§63.11087(a) requires the gasoline storage tank to meet the emissions limit and management practices in Table 1 to this subpart. Therefore, this gasoline storage tank must meet the requirements listed under §63.11100, Table 1, item 2, as follows:

- a. Reduce emissions of total organic HAP or TOC by 95% (by weight) with a closed vent system and control device; or
- b. equip each internal floating roof gasoline tank according to the requirements in 40 CFR Part 60 Subpart Kb, specifically, §60.112b(a)(1) except for the secondary seal requirement under §60.112b(a)(1)(ii)(B) and the requirements in §60.112b(a)(1)(iv) through (ix); and
- c. equip each external roof gasoline storage tank according to the requirements in §60.112b(a)(2), except that the requirements of §60.112b(a)(2)(ii) shall only be required if such storage tank does not currently meet the requirements of §60.112b(a)(2)(i); or

- d. equip and operate each internal and external floating roof gasoline storage tank according to the applicable requirements in §63.1063(a)(1) and (b), and equip each external floating roof gasoline storage tank according to the requirements of §63.1063(a)(2) if such storage tank does not currently meet the requirements of §63.1063(a)(1).

The domed external floating roof tanks is equipped with a mechanical shoe type primary seal and a secondary wiper seal that meets the requirements according to §60.112(b)(a)(1). Therefore, the following conditions will be listed on the permit to ensure compliance:

- *The floating roof shall be floating on the surface of the stored liquid at all times (i.e., off the roof leg supports) except during the initial fill until the roof is lifted off the leg supports and when the tank is completely emptied and subsequently refilled. When the roof is resting on the leg supports the processes of filling or emptying and refilling the tank shall be continuous and shall be accomplished as rapidly as possible. Whenever the owner or operator intends to land the roof on its legs, the owner or operator shall notify the APCO in writing at least five calendar days prior to performing the work. The tank must be in compliance with Rule 4623 before it may land the roof on its legs. [District Rule 4623, 5.3.1.1, and 5.4.3, and 40 CFR 63.11087(a)]*
- *Each opening in a non-contact floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents shall provide a projection below the liquid surface. [District Rule 4623, 5.5.2.1.1 and 40 CFR 63.11087(a)]*
- *Each opening in the floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains shall be equipped with a cover, or a lid shall be maintained in a closed position at all times (i.e. no visible gaps) except when the device is in use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted in place except when they are in use. [District Rule 4623, 5.5.2.1, and 40 CFR 63.11087(a)]*
- *Automatic bleeder vents shall be equipped with a gasket and shall be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the leg roof supports. [District Rule 4623, 5.5.2.1.3, and 40 CFR 63.11087(a)]*
- *Rim vents shall be equipped with a gasket and shall be set to open only when the floating roof is not floating or at the manufacturer's recommended setting. [District Rule 4623, 5.5.2.1.4, and 40 CFR 63.11087(a)]*
- *Each penetration of the floating roof for the purpose of sampling shall be a sample well. The well shall have a slit fabric cover that covers at least 90 percent of the opening. The fabric cover must be impermeable. [District Rule 4623, 5.5.2.1.5, and 40 CFR 63.11087(a)]*
- *Each penetration of the floating roof that allows for the passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. The*

*fabric sleeve must be impermeable. [District Rule 4623,5.5.2.1.6, and 40 CFR 63.11087(a)]*

§63.11087(c) requires the owner or operator to perform testing and monitoring specified in §63.11092(e).

§63.11092(e)(1) requires the owner or operator to perform inspections of the floating system according to the requirements of §60.113b(a). Therefore, the following conditions will be listed on the permit to ensure compliance:

- *The owner or operator shall visually inspect the floating roof, and its appurtenant parts, fittings, etc. and measure the gaps of the primary seal and/or secondary seal prior to filling the tank for newly constructed, repair, or rebuilt internal floating roof tanks. If holes, tears, or openings in the primary seal, the secondary seal, the seal fabric or defects in the internal floating roof or its appurtenant parts, components, fittings, etc., are found, they shall be repaired prior to filling the tank. [District Rule 4623,6.1.4.1, 40 CFR 63.11087(c), and 40 CFR 63.11092(e)(1)]*
- *The owner or operator shall visually inspect, through the manholes, roof hatches, or other opening on the fixed roof, the floating roof and its appurtenant parts, fittings, etc., and the primary seal and/or secondary seal at least once every 12 months after the tank is initially filled with an organic liquid. There should be no visible organic liquid on the roof, tank walls, or anywhere. Other than the gap criteria specified by this rule, no holes, tears, or other openings are allowed that would permit the escape of vapors. Any defects found are violations of this rule. [District Rule 4623,6.1.4.2, 40 CFR 63.11087(c), and 40 CFR 63.11092(e)(1)]*
- *If any failure (i.e. visible organic liquid on the internal floating roof, tank walls or anywhere, holes or tears in the seal fabric) is detected during 12 months visual inspection, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If the detected failure cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the APCO in the inspection report. Such a request must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible. [40 CFR 63.11087(c) and 40 CFR 63.11092(e)(1)]*
- *The owner or operator shall visually inspect the internal floating roof, the primary seal and/or secondary seal, gaskets, slotted membrane and/or sleeve seals each time the storage tank is emptied and degassed. If holes, tears, or openings in the primary seal, the secondary seal, the seal fabric or defects in the internal floating roof or its appurtenant parts, components, fittings, etc., are found, they shall be repaired prior to refilling the tank. [40 CFR 63.11087(c) and 40 CFR 63.11092(e)(1)]*

- *The owner or operator shall notify the District in writing at least 30 days prior to conduct the visual inspection of the storage vessel, so the District can arrange an observer. [40 CFR 63.11087(c) and 40 CFR 63.11092(e)(1)]*
- *The owner or operator shall conduct actual gap measurements of the primary seal and/or secondary seal at least once every 60 months. Other than the gap criteria specified by this permit, no holes, tears, or other openings are allowed that would permit the escape of hydrocarbon vapors. Any defects found shall constitute a violation of this rule. [District Rule 4623, 6.1.4.3 and 40 CFR 63.11087(c)]*

§63.11087(d) requires the owner or operator to submit the applicable notifications as required under §63.11093.

§63.11093(a) requires the owner or operator to submit an Initial Notification as specified in §63.9(b). If the facility is in compliance with the requirements of this subpart at the time the Initial Notification is due, the Notification of Compliance Status required under paragraph (b) of this section may be submitted in lieu of the Initial Notification.

§63.11093(b) requires the owner or operator of an affected source under this subpart must submit a Notification of Compliance Status as specified in §63.9(b). The Notification of Compliance Status must specify which of the compliance options included in Table 1 of this subpart is used to comply with this subpart.

The facility submitted the Notification to Compliance Status to the Administrator and District on March 07, 2011 stating that the facility is in compliance with the requirements of this subpart at the time the Initial Notification is due on January 10, 2011. Therefore, compliance with the requirements of these sections is expected.

§63.11087(e) requires the owner or operator to keep records and submit reports as specified in §63.11094 and §63.11095.

§63.11094 and §63.11095 require to keep records and submit reports per §60.115b. Therefore, the following conditions will be listed on the permit to ensure compliance:

- *The owner or operator shall submit the reports of the floating roof tank inspections to the APCO within five calendar days after the completion of the inspection only for those tanks that failed to meet the applicable requirements of Rule 4623, Sections 5.2 through 5.5. The inspection report for tanks that have been determined to be in compliance with the requirements of Sections 5.2 through 5.5 need not be submitted to the APCO, but the inspection report shall be kept on-site and made available upon request by the APCO. The inspection report shall contain all necessary information to demonstrate compliance with the provisions of this rule, including the following: 1) Date the storage vessel was emptied, date of inspection and names and titles of company personnel doing the inspection. 2) Tank identification number and Permit to Operate number. 3) Observed condition of each component of the control equipment (seals, floating roof, and fittings). 4) Measurements of the gaps between the tank shell and primary and secondary seals. 5)*

*Leak free status of the tank and floating roof deck fittings. Records of the leak-free status shall include the vapor concentration values measured in parts per million by volume (ppmv). 6) Data, supported by calculations, demonstrating compliance with the requirements specified in Sections 5.4 and 5.5.2.3 of Rule 4623. 7) Nature of defects and any corrective actions or repairs performed on the tank in order to comply with rule 4623 and the date(s) such actions were taken. [District Rule 4623,6.3.5 and 40 CFR 63.11087(e)]*

§63.11089(a) requires the owner or operator to perform a monthly leak inspection of all equipment in gasoline service. For this inspection, detection methods incorporating sight, sound, and smell are acceptable. Therefore, the following conditions will be listed on the permit to ensure compliance:

- *Each calendar month, the owner or operator shall perform leak inspection of all equipment in gasoline service. Equipment in gasoline service is defined as a piece of equipment used in a system that transfers gasoline or gasoline vapors. For this inspection, detection methods incorporating sight, sound, and smell are acceptable. [40 CFR 63.11089(a)]*

§63.11089(b) requires that a log book must be used and must be signed by the owner or operator at the completion of each inspection. A section of the log book must contain a list, summary description, or diagram(s) showing the location of all equipment in gasoline service at the facility. Therefore, the following condition will be listed on the permit to ensure compliance:

- *For monthly leak inspection, a log book shall be used and shall be signed by the owner or operator at the completion of each inspection. A section of the log book shall contain a list, summary description, or diagram(s) showing the location of all equipment in gasoline service at the facility. [40 CFR 63.11089(b) and 40 CFR 63.11094(d)]*

§63.11089(c) requires that each detection of a liquid or vapor leak must be recorded in the log book. When a leak is detected, an initial attempt at repair must be made as soon as practicable, but no later than 5 calendar days after the leak is detected. Repair or replacement of leaking equipment must be completed within 15 days after detection of the leak, except as provided in §63.11089(d).

§63.11089(d) states that delay of repair of leaking equipment will be allowed if the repair is not feasible within 15 days. The owner or operator must submit a semiannual report that includes the reason(s) why the repair was not feasible and the date each repair was completed. Therefore, the following condition will be listed on the permit to ensure compliance:

- *Each detection of a liquid or vapor leak shall be recorded in the log book. When a leak is detected, an initial attempt at repair shall be made as soon as practicable, but no later than 5 calendar days after the leak is detected. Repair or replacement of leaking equipment shall be completed within 15 calendar days after detection of each leak. Delay*

*of repair of leaking equipment will be allowed if the repair is not feasible within 15 days. The owner or operator shall provide in the semiannual report the reason(s) why the repair was not feasible and the date each repair was completed. [40 CFR 63.11089(d)]*

§63.11089(e) requires the owner or operator must comply with the requirements of this subpart by the applicable dates specified in §63.11083.

As discussed in section §63.11083(b) above, the facility is currently comply with the requirements of these sections.

§63.11089(f) requires the owner or operator must submit the applicable notifications as required under §63.11093.

As discussed in previous sections, the facility submitted the Notification of Compliance Status to the Administrator and District on March 07, 2011. Therefore, compliance with the requirements of this section is expected.

§63.11089(g) requires the owner or operator must keep records and submit reports as specified in §63.11094 and §63.11095.

The owner or operator is expected to comply with the requirements of these subparts. The following condition will be listed on the permit to ensure compliance:

- *The owner or operator shall maintain a log book that contains the following information: 1.) dates of leak inspections, 2.) the nature of the leak and the method of detection; 3.) findings, 4.) corrective action (date each leak is repaired), 5.) repair methods applied in each attempt to repair the leak; 6.) the reason for the delay if the leak is not repaired within 15 calendar days after discovery of the leak; 7.) the date of successful repair of the leak; and 8.) inspector name and signature. [40 CFR 63.11089(g), 40 CFR 11094(e), and 40 CFR 63.11095(a)(3)]*

§63.11092(e)(1) requires the owner or operator operates a floating roof gasoline storage tank must perform inspections according to the requirement of §60.113b(a).

As discussed in the previous section, this floating roof gasoline storage tank will comply with the requirements of §60.113b(a). Therefore, compliance with the requirements of this section is expected.

§63.11093 specify Notifications, Records, and Reports requirements respectively.

As discussed in previous sections, compliance with the requirements of this section is expected.



§63.11094 specifies recordkeeping requirements

§63.11094(a) requires that all records must be kept for at least five year. Therefore, the following condition will be listed on the permit to ensure compliance:

- *The permittee shall maintain all records required by this permit for a period of at least five years and shall make them readily available for District inspection upon request. [District Rule 4623 and 40 CFR 63.11094(a)]*

§63.11094(d) requires owners or operators that are subject to leak provisions, to keep a record describing the types, identification numbers, and locations of all equipment in gasoline service. Therefore, the following condition will be listed on the permit to ensure compliance:

- *For monthly leak inspection, a log book shall be used and shall be signed by the owner or operator at the completion of each inspection. A section of the log book shall contain a list, summary description, or diagram(s) showing the location of all equipment in gasoline service at the facility. [40 CFR 63.11089(b) and 40 CFR 63.11094(d)]*

§63.11094(e) requires the owner or operator to keep records of equipment leak inspections. Therefore, the following condition will be listed on the permit to ensure compliance:

- *The owner or operator shall maintain a log book that contains the following information: 1.) dates of leak inspections, 2.) the nature of the leak and the method of detection; 3.) findings, 4.) corrective action (date each leak is repaired), 5.) repair methods applied in each attempt to repair the leak; 6.) the reason for the delay if the leak is not repaired within 3 calendar days after discovery of the leak; 7.) the date of successful repair of the leak; and 8.) inspector name and signature. [40 CFR 63.11089(g), 40 CFR 63.11094(e), and 40 CFR 63.11095(a)(3)]*

§63.11095 specify reporting requirements.

§63.11095(a)(1) requires the owner or operator to submit a semi-annual compliance report that includes information specified in §60.115(b)(a) for internal floating roof storage tank.

The facility has submitted semi-annual compliance reports for this tank since August 1, 2011 and every half year thereafter. Therefore, continues compliance with the requirements of this section is expected.

§63.11095(a)(3) requires the owner or operator shall report the number of equipment leaks not repaired within 15 days after detection. Therefore, the following condition will be listed on the permit to ensure compliance:

- *Each detection of a liquid or vapor leak shall be recorded in the log book. When a leak is detected, an initial attempt at repair shall be made as soon as practicable, but no later than 5 calendar days after the leak is detected. Repair or replacement of leaking equipment shall be completed within 15 calendar days after detection of each leak. Delay*

*of repair of leaking equipment will be allowed if the repair is not feasible within 15 days. The owner or operator shall provide in the semiannual report the reason(s) why the repair was not feasible and the date each repair was completed. [40 CFR 63.11089(g), 40 CFR 63.11094(e), and 40 CFR 63.11095(a)(3)]*

§63.11095(a)(4) states the storage vessels complying with §63.11087(b) after January 10, 2011, the storage vessel's Notification of Compliance Status information can be included in the next semi-annual compliance report in lieu of filing a separate Notification of Compliance Status report under §63.11093.

§63.11095(b) states the owner or operator of an affected source subject to the control requirements of this subpart shall submit an excess emissions report to the Administrator at the time the semi-annual compliance report is submitted.

§63.11095(d) states the owner or operator of an affected source under this subpart shall submit a semi-annual report including the number, duration, and a brief description of each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with §63.11085(a), including actions taken to correct a malfunction.

The facility submitted the most recent semi-annual compliance report to the Administrator and District on January 26, 2015, which included discussion of all requirements under these sections. Therefore, continuous compliance with the requirements of these sections is expected.

#### **District Rule 4101 Visible Emissions**

District Rule 4101, Section 5.0, indicates that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour, which is dark or darker than Ringelmann 1 or equivalent to 20% opacity. The following condition will be listed on the permit to ensure compliance:

- *{15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]*

#### **District Rule 4102 Nuisance**

Section 4.0 prohibits discharge of air contaminants, which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. The following condition will be listed on the permit to ensure compliance:

- {98} No air contaminant shall be released into the atmosphere, which causes a public nuisance. [District Rule 4102]

### **California Health & Safety Code 41700 (Health Risk Assessment)**

District Policy APR 1905 – *Risk Management Policy for Permitting New and Modified Sources* specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

As demonstrated above, there are no increases in emissions associated with this project, therefore a health risk assessment is not necessary and no further risk analysis is required. Compliance with the requirement of this rule is expected.

### **District Rule 4623 Storage of Organic Liquids**

This rule applies to any tank with a capacity of 1,100 gallons or greater in which any organic liquid is placed, held, or stored.

Section 5.1.1 of this rule requires Group C vessels (capacity greater than 39,600 gallons) storing organic liquid with a TVP of less than 11 psia to serve by internal floating roof, external floating roof, or vapor recovery system.

This is an existing 689,136 gallons external floating roof storage tank, however, the facility is proposing to install a geodesic dome to this tank.

As discussed in NSPS section above, a domed external floating roof tank will be considered an internal floating tank and therefore, this domed external floating roof tank will subject to internal floating roof requirements as a result of this project. The following condition will be listed on the permit to ensure compliance:

- *True vapor pressure (TVP) of the liquid stored in this tank shall be less than 11 psia.*  
[District Rule 4623.5.1.1]

Section 5.1.3 requires all tanks to be leak-free, as defined by Section 3.17 of the rule, except for the applicable provisions of Table 3 through Table 5 of section 5.7, and section 5.7.5.4 of this rule.

The proposed tank will be subjected to Table 5 requirements as a result of this project. In addition, the facility elected to include this existing storage tank into the Tank Interior Cleaning Program, which complies with section 5.7.5.4 requirements on, March 13, 2012. See Section 5.7 below for detailed discussions. Therefore, compliance with the requirements of this section is expected.

Section 5.4.1, the floating roof tanks shall be equipped with seals that meet the criteria set forth in Section 5.3 except for complying with the requirement specified in Section 5.3.2.1.3.

This tank is a welded type tank and is equipped with a mechanical shoe-type design primary seal, so this tank must meet all the specifications listed in Section 5.3.2.1. The following conditions will be listed on the permit to ensure compliance:

- {2506} Gaps between the tank shell and the primary seal shall not exceed 1-1/2 inches. [District Rule 4623.5.3.2.1.1]
- {2507} The cumulative length of all gaps between the tank shell and the primary seal greater than 1/2 inch shall not exceed 10% of the circumference of the tank. [District Rule 4623.5.3.2.1.1]
- {2508} The cumulative length of all primary seal gaps greater than 1/8 inch shall not exceed 30% of the circumference of the tank. [District Rule 4623.5.3.2.1.1]
- {2509} No continuous gap in the primary seal greater than 1/8 inch wide shall exceed 10% of the tank circumference. [District Rule 4623.5.3.2.1.1]
- {2510} No gap between the tank shell and the secondary seal shall exceed 1/2 inch. [District Rule 4623.5.3.2.1.2]
- {2511} The cumulative length of all gaps between the tank shell and the secondary seal, greater than 1/8 inch shall not exceed 5% of the tank circumference. [District Rule 4623.5.3.2.1.2]
- {2555} The metallic shoe-type seal shall be installed so that one end of the shoe extends into the stored liquid and the other end extends a minimum vertical distance of 18 inches above the stored liquid surface. [District Rule 4623.5.4.1]
- {2513} The geometry of the metallic-shoe type seal shall be such that the maximum gap between the shoe and the tank shell shall be no greater than 3 inches for a length of at least 18 inches in the vertical plane above the liquid. [District Rule 4623.5.3.2.1.4]
- {2514} There shall be no holes, tears, or openings in the secondary seal or in the primary seal envelope that surrounds the annular vapor space enclosed by the roof edge, seal fabric, and secondary seal. [District Rule 4623.5.3.2.1.5]
- {2515} The secondary seal shall allow easy insertion of probes of up to 1-1/2 inches in width in order to measure gaps in the primary seal. [District Rule 4623.5.3.2.1.6]
- {2516} The secondary seal shall extend from the roof to the tank shell and shall not be attached to the primary seal. [District Rule 4623.5.3.2.1.7]

Section 5.4.3 requires the owner or operator to comply with floating roof landing requirements specified in Section 5.3.1.3. Therefore, the following condition will be listed on the permit to ensure compliance:

- *The floating roof shall be floating on the surface of the stored liquid at all times (i.e., off the roof leg supports) except during the initial fill until the roof is lifted off the leg supports and when the tank is completely emptied and subsequently refilled. When the roof is resting on the leg supports the processes of filling or emptying and refilling the tank shall be continuous and shall be accomplished as rapidly as possible. Whenever the owner or operator intends to land the roof on its legs, the owner or operator shall notify the APCO in writing at least five calendar days prior to performing the work. The tank must be in compliance with this rule before it may land the roof on its legs. [District Rule 4623.5.4.3 and 40 CFR 63.11087(a)]*

Section 5.5.1 requires that all openings in the roof used for sampling and gauging, except pressure-vacuum valves complying with Section 5.2, shall provide a projection below the liquid surface to prevent belching of liquid and to prevent entrained organic vapor from escaping from the liquid contents of the tank. The tank shall be equipped with a cover, seal or lid. Therefore, the following condition will be listed on the permit to ensure compliance:

- *{2517} All openings in the roof used for sampling and gauging, except pressure-vacuum valves which shall be set to within 10% of the maximum allowable working pressure of the roof, shall provide a projection below the liquid surface to prevent belching of liquid and to prevent entrained or formed organic vapor from escaping from the liquid contents of the tank and shall be equipped with a cover, seal or lid that shall be in a closed position at all times, with no visible gaps and be gas tight, except when the device or appurtenance is in use. [District Rule 4623.5.5.1]*

Section 5.5.2.1 requires that floating roof deck fittings shall meet all the requirements specified in Section 5.5.2.1.1 through 5.5.2.1.6. Therefore, the following conditions will be listed on the permit to ensure compliance:

- *Each opening in a non-contact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents shall provide a projection below the liquid surface. [District Rule 4623.5.5.2.1.1 and 40 CFR 63.11087(a)]*
- *Each opening in the floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains shall be equipped with a cover, or a lid shall be maintained in a closed position at all times (i.e. no visible gaps) except when the device is in use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted in place except when they are in use. [District Rule 4623.5.5.2.1.2 and 40 CFR 63.11087(a)]*
- *Automatic bleeder vents shall be equipped with a gasket and shall be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the leg roof supports. [District Rule 4623.5.5.2.1.3 and 40 CFR 63.11087(a)]*

- *Rim vents shall be equipped with a gasket and shall be set to open only when the floating roof is not floating or at the manufacturer's recommended setting. [District Rule 4623.5.5.2.1.4 and 40 CFR 63.11087(a)]*
- *Each penetration of the floating roof for the purpose of sampling shall be a sample well. The well shall have a slit fabric cover that covers at least 90 percent of the opening. The fabric cover must be impermeable. [District Rule 4623.5.5.2.1.5 and 40 CFR 63.11087(a)]*
- *Each penetration of the floating roof that allows for the passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. The fabric sleeve must be impermeable. [District Rule 4623.5.5.2.1.6 and 40 CFR 63.11087(a)]*

Sections 5.5.2.4 list requirements for slotted guidepole. This existing floating roof storage tank is equipped with slotted guidepole. Therefore, the following conditions will be listed on the permit to ensure compliance:

- *All slotted sampling or gauging wells shall provide a projection below the liquid surface. [District Rule 4623.5.5.2.4.1]*
- *The slotted guidepole well shall be equipped with a sliding cover, a well gasket, a pole sleeve, a pole wiper, and an internal float and float wiper designed to minimize the gap between the float and the well, and provided the gap shall not exceed one-eighth inch; or shall be equipped with a well gasket, a zero gap pole wiper seal and a pole sleeve that projects below the liquid surface. [District Rule 4623.5.5.2.4.2]*
- *The gap between the pole wiper and the guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed one-eighth inch. [District Rule 4623.5.5.2.4.3]*

Section 5.7 lists the requirements of the Voluntary Tank Preventive Inspection and Maintenance, and Tank Interior Cleaning Programs.

The facility elected to include this existing storage tank in the Voluntary Tank Preventive Inspection and Maintenance, and Tank Interior Cleaning Programs on March 13, 2012. Therefore, the following conditions will be listed on the permit to ensure compliance:

- *The owner or operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 4623, Table 5]*

- Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 4623, Table 5]
- Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21 by a portable hydrocarbon detection instrument that is calibrated with methane, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 4623, Table 5]
- Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 4623, Table 5]
- Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 5 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 5 shall constitute a violation of this rule. [District Rule 4623, Table 5]
- If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 4623, Table 5]
- Any component found to be leaking on two consecutive annual inspections is in violation of this rule, even if covered under the voluntary inspection and maintenance program. [District Rule 4623, Table 5]
- The owner or operator shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 4623]

- During tank cleaning operations, draining and refilling of this tank shall occur as a continuous process and shall proceed as rapidly as practicable while the roof is not floating on the surface of the stored liquid. [District Rule 4623]
- Gap seal requirements shall not apply while the roof is resting on its legs, and during the processes of draining, degassing, or refilling the tank. A leak-free condition will not be required if the operator is draining or refilling this tank in a continuous, expeditious manner. [District Rule 4623]
- After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid having a TVP of 0.5 psia or greater is placed, held, or stored in this tank. [District Rule 4623]
- While performing tank cleaning activities, the owner or operators may only use the following cleaning agents: water and clean (produced) water, diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 4623]
- Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623]
- During sludge removal, the owner or operator shall vent emissions from the sludge receiving vessel to the vapor recovery system under Permit to Operate N-758-13. [District Rules 2201 and 4623]
- The owner or operator shall only transport removed sludge in closed, liquid leak-free containers. [District Rule 4623]
- The owner or operator shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rule 4623]

Section 6.1.4 requires the owner or operator shall perform a visually inspections, and conduct actual gap measurements according to the timelines specified in this section. Therefore, the following conditions will be listed on the permit to ensure compliance:

- The owner or operator shall visually inspect the internal floating roof, and its appurtenant parts, fittings, etc. and measure the gaps of the primary seal and/or secondary seal prior to filling the tank for newly constructed, repair, or rebuilt internal floating roof tanks. If holes, tears, or openings in the primary seal, the secondary seal, the seal fabric or defects in the floating roof or its appurtenant parts, components, fittings, etc., are found,



they shall be repaired prior to filling the tank. [District Rule 4623.6.1.4.1 and 40 CFR Part 63.11092(e)]

- The owner or operator shall visually inspect, through the manholes, roof hatches, or other opening on the fixed roof, the internal floating roof and its appurtenant parts, fittings, etc., and the primary seal and/or secondary seal at least once every 12 months after the tank is initially filled with an organic liquid. There should be no visible organic liquid on the roof, tank walls, or anywhere. Other than the gap criteria specified by this rule, no holes, tears, or other openings are allowed that would permit the escape of vapors. Any defects found are violations of this rule. [District Rule 4623.6.1.4.2 and 40 CFR Part 63.11092(e)]
- The owner or operator shall conduct actual gap measurements of the primary seal and/or secondary seal at least once every 60 months. Other than the gap criteria specified by this permit, no holes, tears, or other openings are allowed that would permit the escape of hydrocarbon vapors. Any defects found shall constitute a violation of this rule. [District Rule 4623.6.1.4.3]

Section 6.3 requires the owner or operator shall retain accurate records required by this rule for a period of five years. This tank is subject to the requirements of Section 6.3.5. Therefore, the following conditions will be listed on the permit to ensure compliance:

- The owner or operator shall submit the reports of the floating roof tank inspections to the APCO within five calendar days after the completion of the inspection only for those tanks that failed to meet the applicable requirements of Rule 4623, Sections 5.2 through 5.5. The inspection report for tanks that have been determined to be in compliance with the requirements of Sections 5.2 through 5.5 need not be submitted to the APCO, but the inspection report shall be kept on-site and made available upon request by the APCO. The inspection report shall contain all necessary information to demonstrate compliance with the provisions of this rule, including the following: 1) Date the storage vessel was emptied, date of inspection and names and titles of company personnel doing the inspection. 2) Tank identification number and Permit to Operate number. 3) Observed condition of each component of the control equipment (seals, internal floating roof, and fittings). 4) Measurements of the gaps between the tank shell and primary and secondary seals. 5) Leak free status of the tank and floating roof deck fittings. Records of the leak-free status shall include the vapor concentration values measured in parts per million by volume (ppmv). 6) Data, supported by calculations, demonstrating compliance with the requirements specified in Sections 5.4 and 5.5.2.4.3 of Rule 4623. 7) Nature of defects and any corrective actions or repairs performed on the tank in order to comply with rule 4623 and the date(s) such actions were taken. [District Rule 4623, and 40 CFR 63.11094]
- The permittee shall maintain all records required by this permit for a period of at least five years and shall make them readily available for District inspection upon request. [District Rule 4623 and 40 CFR 63.11094(a)]

Section 6.3.7 requires an operator to maintain records of the external floating roof or internal floating roof landing activities. Therefore, the following condition will be listed on the permit to ensure compliance:

- *The owner or operator shall maintain the records of the internal floating roof landing activities that are performed pursuant to Rule 4623, Section 5.3.1.3 and 5.4.3. The records shall include information on the TVP, API gravity, and type of organic liquid stored in the tank, the purpose of landing the roof on its legs, the date of roof landing, duration the roof was on its legs, the level or height at which the tank roof was set to land on its legs, and the lowest liquid level in the tank. [District Rule 4623]*

Compliance with the requirements of this Rule is expected.

#### **California Health & Safety Code 42301.6 (School Notice)**

As discussed in Section III of this document, a school notice is not required.

#### **California Environmental Quality Act (CEQA)**

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that none of the project specific emission unit(s) trigger Best Available Control Technology (BACT) requirements. Furthermore, the District has determined that potential emission increases would have a less than significant health impact on sensitive receptors.

Issuance of permits for emissions units not subject to BACT requirements and with health impact less than significant is a matter of ensuring conformity with applicable District rules and regulations and does not require discretionary judgment or deliberation. Thus, the District concludes that this permitting action constitutes a ministerial approval. Section 21080 of the Public Resources Code exempts from the application of CEQA those projects

over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

## IX. RECOMMENDATION

Compliance with all applicable rules and regulations is expected. Pending EPA noticing period, issue Authority to Construct N-758-14-6 subject to the permit conditions on the attached draft Authority to Construct in Appendix I.

## X. BILLING INFORMATION

Annual Permit Fees				
Permit Number	Previous Fee Schedule	Fee Schedule	Fee Description	Annual Fee
N-758-14-6	3020-05-F	3020-05-F (500,000 or Greater but Less Than 1,000,000 gallon)	689,136 gallon	\$ 316

## APPENDICES

- Appendix I: Draft Authority to Construct (ATC)*
- Appendix II: Existing Permit to Operate (PTO) & Authority to Construct (ATC)*
- Appendix III: Pre-Project Potential Emissions – EPA's Tanks 4.0.9.d program reports*
- Appendix IV: Post-Project Potential Emissions – EPA's Tanks 4.0.9.d program reports*
- Appendix V: Compliance Certification*
- Appendix VI: EPA Document – Applicability Determination Index (ADI) 100021 (External Floating Rood Tank Enclosed with Fixed Roof)*

## **APPENDIX I**

### **Draft Authority to Construct (ATC)**

San Joaquin Valley  
Air Pollution Control District

## AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-758-14-6

LEGAL OWNER OR OPERATOR: EQUILON ENTERPRISES LLC  
MAILING ADDRESS: SHELL OIL PRODUCTS US ATTN: ENV COORD  
2555 13TH AVENUE SW  
SEATTLE, WA 98134

LOCATION: ROUGH & READY ISLAND  
STOCKTON, CA 95203

### EQUIPMENT DESCRIPTION:

MODIFICATION OF ONE 689,136 GALLON (16,408 BBL) ABOVEGROUND WELDED EXTERNAL FLOATING ROOF GASOLINE/DENATURED ETHANOL/DIESEL STORAGE TANK (TANK #18) WITH A MECHANICAL SHOE TYPE PRIMARY SEAL AND A SECONDARY WIPER SEAL: TO INSTALL A GEODESIC DOME ON THIS STORAGE TANK. THE POST-PROJECT EQUIPMENT DESCRIPTION BECOMES: ONE 689,136 GALLON (16,408 BBL) ABOVEGROUND DOMED AND WELDED EXTERNAL FLOATING ROOF GASOLINE/DENATURED ETHANOL/DIESEL/BIODIESEL STORAGE TANK (TANK #18) WITH A MIXER, A MECHANICAL SHOE TYPE PRIMARY SEAL AND A SECONDARY WIPER SEAL

## CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct N-758-14-5 shall be implemented prior to, or concurrently with this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
4. VOC emissions from this tank shall not exceed 6.3 pounds in any one day. [District Rule 2201] Federally Enforceable Through Title V Permit
5. VOC emissions from this tank shall not exceed 1,417 pounds in any 12 consecutive month rolling period. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director, APCO

Arnaud Manjolle, Director of Permit Services

N-758-14-6 Oct 7 2015 8:36AM - SCW Joint Inspection NOT Required

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6. The permittee shall maintain records sufficient to demonstrate compliance with each emission limit. These records shall contain each process variable used (e.g., throughput, RVP, etc.) in estimating VOC emissions from this tank and actual process variables (e.g. throughput, RVP, etc.) of this tank. The process variables used in estimating the emissions shall be compared to that of the actual process variables to demonstrate compliance with each emission limit. The permittee may also use EPA's Tanks program (or other District accepted methodologies) with actual process variables to demonstrate compliance with each emission limit. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Fugitive VOC from valves, flanges, connector, pump seals etc., associated with this tank shall not exceed any of the following limits: 0.2 lb/day and 55 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Fugitive VOC emissions from component leaks shall be calculated using component count and appropriate emission factors from "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities", Table IV-1b (Feb 1999) - Marketing Terminal. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Throughput of organic liquid for this tank shall not exceed any of the following limits: 698,136 gallons/day, 20,961,220 gallons/month and 50,952,827 gallons/year based on a 12-month rolling basis. [District Rule 2201] Federally Enforceable Through Title V Permit
10. True vapor pressure (TVP) of the liquid stored in this tank shall be less than 11 psia. [District Rule 4623] Federally Enforceable Through Title V Permit
11. When this tank is receiving and/or storing an organic liquid with a TVP less than 0.5 psia, this tank is exempt from all other requirements of District Rule 4623 (05/19/05) except for complying with the following provisions: 1.) TVP and API Gravity Testing provisions pursuant to Section 6.2; 2.) Recordkeeping provisions pursuant to Section 6.3.6; 3.) Test Methods provisions pursuant to Section 6.4; and 4.) Compliance schedules pursuant to Section 7.2. [District Rule 4623]
12. The owner or operator shall determine RVP and the temperature of the organic liquid (except diesel and biodiesel) stored on monthly basis. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
13. Gaps between the tank shell and the primary seal shall not exceed 1 1/2 inches. [District Rule 4623] Federally Enforceable Through Title V Permit
14. The cumulative length of all gaps between the tank shell and the primary seal greater than 1/2 inch shall not exceed 10% of the circumference of the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
15. The cumulative length of all primary seal gaps greater than 1/8 inch shall not exceed 30% of the circumference of the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
16. No continuous gap in the primary seal greater than 1/8 inch wide shall exceed 10% of the tank circumference. [District Rule 4623] Federally Enforceable Through Title V Permit
17. {2510} No gap between the tank shell and the secondary seal shall exceed 1/2 inch. [District Rule 4623]
18. {2511} The cumulative length of all gaps between the tank shell and the secondary seal, greater than 1/8 inch shall not exceed 5% of the tank circumference. [District Rule 4623]
19. {2555} The metallic shoe-type seal shall be installed so that one end of the shoe extends into the stored liquid and the other end extends a minimum vertical distance of 18 inches above the stored liquid surface. [District Rule 4623]
20. The geometry of the metallic-shoe type seal shall be such that the maximum gap between the shoe and the tank shell shall be no greater than 3 inches for a length of at least 18 inches in the vertical plane above the liquid. [District Rule 4623] Federally Enforceable Through Title V Permit
21. There shall be no holes, tears, or openings in the secondary seal or in the primary seal envelope that surrounds the annular vapor space enclosed by the roof edge, seal fabric, and secondary seal. [District Rule 4623 and 40 CFR.63.11087(c)] Federally Enforceable Through Title V Permit
22. The secondary seal shall allow easy insertion of probes of up to 1 1/2 inches in width in order to measure gaps in the primary seal. [District Rule 4623] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

23. The secondary seal shall extend from the roof to the tank shell and shall not be attached to the primary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
24. The floating roof shall be floating on the surface of the stored liquid at all times (i.e., off the roof leg supports) except during the initial fill until the roof is lifted off the leg supports and when the tank is completely emptied and subsequently refilled. When the roof is resting on the leg supports the processes of filling or emptying and refilling the tank shall be continuous and shall be accomplished as rapidly as possible. Whenever the owner or operator intends to land the roof on its legs, the owner or operator shall notify the APCO in writing at least five calendar days prior to performing the work. The tank must be in compliance with Rule 4623 before it may land the roof on its legs. [District Rule 4623 and 40 CFR 63.11087(a)]
25. All openings in the roof used for sampling and gauging, except pressure-vacuum valves which shall be set to within 10% of the maximum allowable working pressure of the roof, shall provide a projection below the liquid surface to prevent belching of liquid and to prevent entrained or formed organic vapor from escaping from the liquid contents of the tank and shall be equipped with a cover, seal or lid that shall be in a closed position at all times, with no visible gaps and be gas tight, except when the device or appurtenance is in use. [District Rule 4623] Federally Enforceable Through Title V Permit
26. The tank shall be in a leak-free condition. The pressure-vacuum relief valve shall be set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in leak-free condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623] Federally Enforceable Through Title V Permit
27. Each opening in a non-contact floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents shall provide a projection below the liquid surface. [District Rule 4623 and 40 CFR 63.11087(a)]
28. Each opening in the floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains shall be equipped with a cover, or a lid shall be maintained in a closed position at all times (i.e. no visible gaps) except when the device is in use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted in place except when they are in use. [District Rule 4623 and 40 CFR 63.11087(a)]
29. Automatic bleeder vents shall be equipped with a gasket and shall be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the leg roof supports. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit
30. Rim vents shall be equipped with a gasket and shall be set to open only when the floating roof is not floating or at the manufacturer's recommended setting. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit
31. Each penetration of the floating roof for the purpose of sampling shall be a sample well. The well shall have a slit fabric cover that covers at least 90 percent of the opening. The fabric cover must be impermeable. [District Rule 4623 and 40 CFR 63.11087(a)]
32. Each penetration of the floating roof that allows for the passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. The fabric sleeve must be impermeable. [District Rule 4623 and 40 CFR 63.11087(a)]
33. All slotted sampling or gauging wells shall provide a projection below the liquid surface. [District Rule 4623]
34. The slotted guidepole well shall be equipped with a sliding cover, a well gasket, a pole sleeve, a pole wiper, and an internal float and float wiper designed to minimize the gap between the float and the well, and provided the gap shall not exceed one-eighth inch; or shall be equipped with a well gasket, a zero gap pole wiper seal and a pole sleeve that projects below the liquid surface. [District Rule 4623]
35. The gap between the pole wiper and the guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed one-eighth inch. [District Rule 4523]

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CONDITIONS CONTINUE ON NEXT PAGE

36. The owner or operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 4623]
37. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 4623]
38. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21 by a portable hydrocarbon detection instrument that is calibrated with methane, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 4623]
39. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 4623]
40. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 5 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 5 shall constitute a violation of this rule. [District Rule 4623]
41. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 4623]
42. Any component found to be leaking on two consecutive annual inspections is in violation of this rule, even if covered under the voluntary inspection and maintenance program. [District Rule 4623]
43. The owner or operator shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rules 2080 and 4623]
44. During tank cleaning operations, draining and refilling of this tank shall occur as a continuous process and shall proceed as rapidly as practicable while the roof is not floating on the surface of the stored liquid. [District Rules 2080 and 4623]
45. Gap seal requirements shall not apply while the roof is resting on its legs, and during the processes of draining, degassing, or refilling the tank. A leak-free condition will not be required if the operator is draining or refilling this tank in a continuous, expeditious manner. [District Rules 2080 and 4623]
46. After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid having a TVP of 0.5 psia or greater is placed, held, or stored in this tank. [District Rules 2080 and 4623]
47. While performing tank cleaning activities, the owner or operators may only use the following cleaning agents: water and clean (produced) water, diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rules 2080 and 4623]
48. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rules 2080 and 4623]
49. During sludge removal, the owner or operator shall vent emissions from the sludge receiving vessel to the vapor recovery system under Permit to Operate N-758-14-6. [District Rules 2080 and 4623]

CONDITIONS CONTINUE ON NEXT PAGE



50. The owner or operator shall only transport removed sludge in closed, liquid leak-free containers. [District Rules 2080 and 4623]
51. The owner or operator shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2080 and 4623]
52. The owner or operator shall visually inspect the floating roof, and its appurtenant parts, fittings, etc. and measure the gaps of the primary seal and/or secondary seal prior to filling the tank for newly constructed, repair, or rebuilt floating roof tanks. If holes, tears, or openings in the primary seal, the secondary seal, the seal fabric or defects in the floating roof or its appurtenant parts, components, fittings, etc., are found, they shall be repaired prior to filling the tank. [District Rule 4623 and 40 CFR 63.11092(e)]
53. When this tank is in gasoline service, the owner or operator shall visually inspect the floating roof, the primary seal and/or secondary seal, gaskets, slotted membrane and/or sleeve seals each time the storage tank is emptied and degassed. If holes, tears, or openings in the primary seal, the secondary seal, the seal fabric or defects in the floating roof or its appurtenant parts, components, fittings, etc., are found, they shall be repaired prior to refilling the tank. [40 CFR 63.11087(c) and 40 CFR 63.11092(e)(1)]
54. The owner or operator shall visually inspect, through the manholes, roof hatches, or other opening on the fixed roof, the floating roof and its appurtenant parts, fittings, etc., and the primary seal and/or secondary seal at least once every 12 months after the tank is initially filled with an organic liquid. There should be no visible organic liquid on the roof, tank walls, or anywhere. Other than the gap criteria specified by this rule, no holes, tears, or other openings are allowed that would permit the escape of vapors. Any defects found are violations of this rule. [District Rule 4623, 40 CFR.63.11087(c), and 40 CFR.63.11092(e)]
55. The owner or operator shall conduct actual gap measurements of the primary seal and/or secondary seal at least once every 60 months. Other than the gap criteria specified by this permit, no holes, tears, or other openings are allowed that would permit the escape of hydrocarbon vapors. Any defects found shall constitute a violation of this rule. [District Rule 4623]
56. The owner or operator shall maintain the records of the floating roof landing activities that are performed pursuant to Rule 4623, Section 5.3.1.3 and 5.4.3. The records shall include information on the TVP, API gravity, and type of organic liquid stored in the tank, the purpose of landing the roof on its legs, the date of roof landing, duration the roof was on its legs, the level or height at which the tank roof was set to land on its legs, and the lowest liquid level in the tank. [District Rule 4623]
57. The owner or operator shall submit the reports of the floating roof tank inspections to the APCO within five calendar days after the completion of the inspection only for those tanks that failed to meet the applicable requirements of Rule 4623, Sections 5.2 through 5.5. The inspection report for tanks that have been determined to be in compliance with the requirements of Sections 5.2 through 5.5 need not be submitted to the APCO, but the inspection report shall be kept on-site and made available upon request by the APCO. The inspection report shall contain all necessary information to demonstrate compliance with the provisions of this rule, including the following: 1) Date the storage vessel was emptied, date of inspection and names and titles of company personnel doing the inspection. 2) Tank identification number and Permit to Operate number. 3) Observed condition of each component of the control equipment (seals, floating roof, and fittings). 4) Measurements of the gaps between the tank shell and primary and secondary seals. 5) Leak free status of the tank and floating roof deck fittings. Records of the leak-free status shall include the vapor concentration values measured in parts per million by volume (ppmv). 6) Data, supported by calculations, demonstrating compliance with the requirements specified in Sections 5.4 of Rule 4623. 7) Nature of defects and any corrective actions or repairs performed on the tank in order to comply with rule 4623 and the date(s) such actions were taken. [District Rule 4623 and 40 CFR 63.11095]

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58. When this tank is in gasoline service, if any failure (i.e. visible organic liquid on the floating roof, tank walls or anywhere, holes or tears in the seal fabric) is detected during 12 months visual inspection, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If the detected failure cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the APCO in the inspection report. Such a request must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible. [40 CFR 63.11087(c) and 40 CFR 63.11092(e)(1)]
59. When this tank is in gasoline service, the owner or operator shall notify the District in writing at least 30 days prior to conduct the visual inspection of the storage vessel, so the District can arrange an observer. [40 CFR 63.11087(c) and 40 CFR 63.11092(e)(1)]
60. When this tank is in gasoline service, the owner or operator shall perform monthly leak inspection of all equipment in gasoline service. Equipment in gasoline service is defined as a piece of equipment used in a system that transfers gasoline or gasoline vapors. For this inspection, detection methods incorporating sight, sound, and smell are acceptable. [40 CFR 63.11089(a)]
61. For monthly leak inspection when this tank is in gasoline service, a log book shall be used and shall be signed by the owner or operator at the completion of each inspection. A section of the log book shall contain a list, summary description, or diagram(s) showing the location of all equipment in gasoline service at the facility. [40 CFR 63.11089(b) and 40 CFR 63.11094(d)]
62. Each detection of a liquid or vapor leak shall be recorded in the log book. When this tank is in gasoline service and a leak is detected, an initial attempt at repair shall be made as soon as practicable, but no later than 5 calendar days after the leak is detected. Repair or replacement of leaking equipment shall be completed within 15 calendar days after detection of each leak. Delay of repair of leaking equipment will be allowed if the repair is not feasible within 15 days. The owner or operator shall provide in the semiannual report the reason(s) why the repair was not feasible and the date each repair was completed. [40 CFR 63.11089(d), 40 CFR 63.11094(e) and 40 CFR 63.11095(a)(3)]
63. When this tank is in gasoline service, the owner or operator shall maintain a log book that contains the following information: 1.) dates of leak inspections, 2.) the nature of the leak and the method of detection; 3.) findings, 4.) corrective action (date each leak is repaired), 5.) repair methods applied in each attempt to repair the leak; 6.) the reason for the delay if the leak is not repaired within 15 calendar days after discovery of the leak; 7.) the date of successful repair of the leak; and 8.) inspector name and signature. [40 CFR 63.11089(g), 40 CFR 63.11094(e), and 40 CFR 63.11095(a)(3)]
64. The permittee shall maintain records of the volatile organic liquid stored, the period of storage, and TVP of that volatile organic liquid during the respective storage period. TVP shall be determined using the data on the Reid vapor pressure (highest receipt or highest tank sample results) and actual storage temperature. [District Rule 2201] Federally Enforceable Through Title V Permit
65. The permittee shall maintain records of daily, monthly and annual (12-month rolling total) organic liquid throughput in gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
66. The permittee shall maintain all records required by this permit for a period of at least five years and shall make them readily available for District inspection upon request. [District Rule 4623 and 40 CFR 63.11094(a)] Federally Enforceable Through Title V Permit

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## **APPENDIX II**

Existing  
Permit to Operate (PTO) N-758-14-4  
&  
Authority to Construct (ATC) N-758-14-5

# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-758-14-4

EXPIRATION DATE: 01/31/2017

## EQUIPMENT DESCRIPTION:

ONE 689,136 GALLON (16,408 BBL) ABOVEGROUND WELDED EXTERNAL FLOATING ROOF  
GASOLINE/DENATURED ETHANOL/DIESEL STORAGE TANK (TANK #18) WITH A MECHANICAL SHOE TYPE  
PRIMARY SEAL AND A SECONDARY WIPER SEAL

## PERMIT UNIT REQUIREMENTS

1. VOC emissions from this tank shall not exceed 28.9 pounds in any one day. [District Rule 2201] Federally Enforceable Through Title V Permit
2. VOC emissions from this tank shall not exceed 6,707 pounds in any 12 consecutive month rolling period. [District Rule 2201] Federally Enforceable Through Title V Permit
3. The permittee shall maintain records sufficient to demonstrate compliance with each emission limit. These records shall contain each process variable used (e.g., throughput, RVP, etc.) in estimating VOC emissions from this tank and actual process variables (e.g. throughput, RVP, etc.) of this tank. The process variables used in estimating the emissions shall be compared to that of the actual process variables to demonstrate compliance with each emission limit. The permittee may also use EPA's Tanks program (or other District accepted methodologies) with actual process variables to demonstrate compliance with each emission limit. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Fugitive VOC from valves, flanges, connector, pump seals etc., associated with this tank shall not exceed any of the following limits: 0.2 lb/day and 55 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Fugitive VOC emissions from component leaks shall be calculated using component count and appropriate emission factors from "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities", Table IV-1b (Feb 1999) - Marketing Terminal. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Throughput of organic liquid for this tank shall not exceed any of the following limits: 698,136 gallons/day, 20,961,220 gallons/month and 50,952,827 gallons/year based on a 12-month rolling basis. [District Rule 2201] Federally Enforceable Through Title V Permit
7. True vapor pressure (TVP) of the liquid stored in this tank shall be less than 11 psia. [District Rule 4623] Federally Enforceable Through Title V Permit
8. The owner or operator shall determine RVP and the temperature of the organic liquid (except diesel) stored on monthly basis. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
9. This tank shall be equipped with a closure device between the tank shell and roof edge consisting of two seals mounted one above the other; the one below shall be referred to as the primary seal, and the one above shall be referred to as the secondary seal. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

10. The external floating roof shall float on the surface of the stored liquid at all times (i.e., off the roof leg supports) except during the initial fill until the roof is lifted off the leg supports and when the tank is completely emptied and subsequently refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible. Whenever the permittee intends to land the roof on its legs, the permittee shall notify the APCO in writing at least five calendar days prior to performing the work. The tank must be in compliance with this rule before it may land on its legs. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit
11. Gaps between the tank shell and the primary seal shall not exceed 1-1/2 inches. [District Rule 4623] Federally Enforceable Through Title V Permit
12. The cumulative length of all gaps between the tank shell and the primary seal greater than 1/2 inch shall not exceed 10% of the circumference of the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
13. Accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm<sup>2</sup> per meter (10.01 in<sup>2</sup> per foot) of tank diameter, and the width of any gap shall not exceed 3.81 cm (1.5 inches). [40CFR 63.11087(c)] Federally Enforceable Through Title V Permit
14. The cumulative length of all primary seal gaps greater than 1/8 inch shall not exceed 30% of the circumference of the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
15. No continuous gap in the primary seal greater than 1/8 inch wide shall exceed 10% of the tank circumference. [District Rule 4623] Federally Enforceable Through Title V Permit
16. Accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm<sup>2</sup> per meter (1.0 in<sup>2</sup> per foot) of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm (1/2 inch). [District Rule 4623 and 40CFR 63.11087(c)] Federally Enforceable Through Title V Permit
17. If the primary seal used is a metallic shoe, one end of the metallic shoe is to extend into the stored liquid and the other end is to extend a minimum vertical distance of 61 cm (24 inches) above the stored liquid surface. [District Rule 4623 and 40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
18. The geometry of the metallic-shoe type seal shall be such that the maximum gap between the shoe and the tank shell shall be no greater than 3 inches for a length of at least 18 inches in the vertical plane above the liquid. [District Rule 4623] Federally Enforceable Through Title V Permit
19. There shall be no holes, tears, or openings in the secondary seal or in the primary seal envelope that surrounds the annular vapor space enclosed by the roof edge, seal fabric, and secondary seal. [District Rule 4623 and 40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
20. The secondary seal shall allow easy insertion of probes of up to 1-1/2 inches in width in order to measure gaps in the primary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
21. The secondary seal shall extend from the roof to the tank shell and shall not be attached to the primary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
22. All openings in the roof used for sampling and gauging, except pressure-vacuum relief valve, shall provide a projection below the liquid surface to prevent belching of liquid and to prevent entrained or formed organic vapor from escaping from the liquid contents of the tank and shall be equipped with a cover, seal or lid that shall be in a closed position at all times, with no visible gaps and be gas tight, except when the device or appurtenance is in use. [District Rule 4623] Federally Enforceable Through Title V Permit
23. The tank shall be in a leak-free condition. The pressure-vacuum relief valve shall be set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in leak-free condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

24. A leak-free condition is defined as a condition without a gas or liquid leak. A gas leak is defined as a reading in excess of 10,000 ppmv as methane, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A liquid leak is defined as a dripping rate of more than three (3) drops per minute. A reading in excess of 10,000 ppmv as methane above background or a liquid leak of greater than three (3) drops per minute is a violation of this permit and Rule 4623 and shall be reported as a deviation, unless this tank is a part of Voluntary Tank Preventive Inspection and Maintenance, and Tank Interior Cleaning Program under section 5.7 of Rule 4623 and complies with all requirements in Table 4 of Rule 4623 for External Floating Roof Tank Preventative Inspection and Maintenance. [District Rule 4623] Federally Enforceable Through Title V Permit
25. Except for automatic bleeder vents, rim vents, and pressure relief vents, each opening in a non-contact external floating roof shall provide a projection below the liquid surface. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit
26. Except for automatic bleeder vents and rim vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid that shall be maintained in a closed position at all times (i.e., no visible gap) except when in actual use. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit
27. Automatic bleeder vents shall be equipped with a gasket and shall be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit
28. Rim vents shall be equipped with a gasket and shall be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit
29. Each emergency roof drain shall be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. The fabric cover must be impermeable if the liquid is drained into the contents of the tanks. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit
30. External floating roof legs shall be equipped with vapor socks or vapor barriers in order to maintain a gas-tight condition so as to prevent VOC emissions from escaping through the roof leg opening. [District Rule 4623] Federally Enforceable Through Title V Permit
31. All wells and similar fixed projections through the floating roof shall provide a projection below the liquid surface. [District Rule 4623] Federally Enforceable Through Title V Permit
32. The solid guidepole well shall be equipped with a pole wiper and a gasketed cover, seal or lid which shall be in a closed position at all times (i.e., no visible gap) except when the well is in use. [District Rule 4623] Federally Enforceable Through Title V Permit
33. The gap between the pole wiper and the solid guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed 1/2 inch. [District Rule 4623] Federally Enforceable Through Title V Permit
34. The slotted guidepole well on a external floating roof shall be equipped with the following: a sliding cover, a well gasket, a pole sleeve, a pole wiper, and an internal float and float wiper designed to minimize the gap between the float and the well, and provided the gap shall not exceed 1/8 inch; or shall be equipped with a well gasket, a zero gap pole wiper seal and a pole sleeve that projects below the liquid surface. [District Rule 4623] Federally Enforceable Through Title V Permit
35. The gap between the pole wiper and the slotted guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed 1/8 inch. [District Rule 4623] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

36. The permittee of external floating roof tanks shall make the primary seal envelope available for unobstructed inspection by the APCO on an annual basis at locations selected along its circumference at random by the APCO. In the case of riveted tanks with toroid-type seals, a minimum of eight locations shall be made available; in all other cases, a minimum of four locations shall be made available. If the APCO suspects a violation may exist the APCO may require such further unobstructed inspection of the primary seal as may be necessary to determine the seal condition for its entire circumference. [District Rule 4623] Federally Enforceable Through Title V Permit
37. Operator shall perform gap measurements on primary and secondary seals within 60 days of the initial fill and at least once every year thereafter to determine compliance with the requirements of Rule 4623. The actual gap measurements of the floating roof primary and secondary seals shall be recorded. The inspection results shall be submitted to the APCO as specified in Section 6.3.5. [District Rule 4623 and 40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
38. Operator shall also perform gap measurements on primary seals during hydrostatic testing of the vessel. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
39. If unit is out of service for a period of one year or more, subsequent refilling with gasoline shall be considered initial fill in accordance with the conditions of this permit. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
40. Operator shall determine gap widths and gap areas for compliance with 40 CFR 60.113b(b)(2) and (3) in the primary and secondary seals using the following procedure: 1) Measure seal gaps, at one or more floating roof levels when the roof is floating off roof leg supports; 2) Measure seal gaps around entire circumference of the tank in each place where a 0.32 cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the tank wall and measure the circumferential distance of each such location; 3) Total surface area of each gap shall be determined by using probes of various widths to accurately measure the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance; and 4) Add the gap surface area of each gap location for the primary seal and the secondary seal individually. Divide the sum for each seal by the nominal diameter of the tank. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
41. If the seals do not meet the required specifications of 40 CFR 60.113b(b)(4)(i) and (ii), operator shall repair or empty the storage vessel within 45 days of identification. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
42. Operator shall notify the APCO 30 days in advance of any gap measurements required by 40 CFR 63.11092(e)(2) and 40 CFR 60.113b(b) to afford the APCO opportunity to have an observer present. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
43. After the tank has been emptied and degassed, if the external floating roof has defects, or the primary seal or secondary seal has holes, tears, or other openings in the seal or seal fabric, the operator shall repair the items as necessary so that none of these conditions exist before filling or refilling the storage vessel with gasoline. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
44. For all visual inspections required by 40 CFR 63.11092(e)(2), the operator shall notify the APCO in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the APCO the opportunity to inspect the storage vessel prior to refilling, except when notification is specifically allowed otherwise by this permit. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
45. If a visual inspection required by 40 CFR 63.11092(e)(2) is not planned and the operator could not have known about the inspection 30 days in advance of refilling the tank, the operator shall notify the APCO at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so it is received by the APCO at least 7 days prior to the refilling. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
46. Operator shall record the vessel on which the measurement was performed, date of the seal gap measurement, raw data obtained in the measurement process in accordance with the conditions of this permit. [40 CFR 63.11087(e)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

47. Within 30 days of the end of each semi-annual period, the operator shall include in the report required by 40 CFR 63.11095(a) the following information regarding gap measurements: the date of measurement, raw data obtained in the measurement process, and all such gap calculations as required by 40 CFR 63.11092(e)(2). [40 CFR 63.11087(e)] Federally Enforceable Through Title V Permit
48. Within 30 days of the end of each semi-annual period, the operator shall include in the report required by 40 CFR 63.11095(a) the following information regarding gap measurements that exceeded 40 CFR 60.113b(4) limits: the date of measurement, raw data obtained in the measurement process, all such gap calculations as required by 40 CFR 63.11092(e)(2), and the date the vessel was emptied or the repairs made and the date of repair. [40 CFR 63.11087(e)] Federally Enforceable Through Title V Permit
49. The permittee shall inspect the primary and secondary seals for compliance with the requirements of Rule 4623 every time this tank is emptied or degassed. Actual gap measurements shall be performed when the liquid level is static but not more than 48 hours after the tank roof is re-floated. [District Rule 4623 and 40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
50. The permittee shall submit the reports of the floating roof tank inspections to the APCO within five calendar days after the completion of the inspection only for those tanks that failed to meet the applicable requirements of Rule 4623, Sections 5.2 through 5.5. The inspection report for tanks that have been determined to be in compliance with the requirements of Sections 5.2 through 5.5 need not be submitted to the APCO, but the inspection report shall be kept on-site and made available upon request by the APCO. The inspection report shall contain all necessary information to demonstrate compliance with the provisions of Rule 4623. [District Rule 4623] Federally Enforceable Through Title V Permit
51. The permittee shall maintain the records of the external floating roof landing activities that are performed pursuant to Rule 4623, Sections 5.3.1.3 and 5.4.3. The records shall include information on the true vapor pressure (TVP), API gravity, storage temperature, type of organic liquid stored in the tank, the purpose of landing the roof on its legs, the date of roof landing, duration the roof was on its legs, the level or height at which the tank roof was set to land on its legs, and the lowest liquid level in the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
52. The permittee shall maintain records of the volatile organic liquid stored, the period of storage, and TVP of that volatile organic liquid during the respective storage period. TVP shall be determined using the data on the Reid vapor pressure (highest receipt or highest tank sample results) and actual storage temperature. [District Rule 2201] Federally Enforceable Through Title V Permit
53. The permittee shall maintain records of daily, monthly and annual (12-month rolling total) organic liquid throughput in gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
54. The permittee shall maintain all records required by this permit for a period of at least five years and shall make them readily available for District inspection upon request. [District Rule 4623 and 40 CFR 63.11094(a)] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.



San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

PERMIT NO: N-758-14-5

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: EQUILON ENTERPRISES LLC  
MAILING ADDRESS: SHELL OIL PRODUCTS US ATTN: ENV COORD  
2555 13TH AVENUE SW  
SEATTLE, WA 98134

LOCATION: ROUGH & READY ISLAND  
STOCKTON, CA 95203

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF ONE 689,136 GALLON (16,408 BBL) ABOVEGROUND WELDED EXTERNAL FLOATING ROOF GASOLINE/DENATURED ETHANOL/DIESEL STORAGE TANK (TANK #18) WITH A MECHANICAL SHOE TYPE PRIMARY SEAL AND A SECONDARY WIPER SEAL: INSTALL MIXER INSIDE THE TANK AND ALLOW BIODIESEL STORAGE. THE POST-PROJECT EQUIPMENT DESCRIPTION WILL BE: ONE 689,136 GALLON (16,408 BBL) ABOVEGROUND WELDED EXTERNAL FLOATING ROOF GASOLINE/DENATURED ETHANOL/DIESEL/BIODIESEL STORAGE TANK (TANK #18) WITH A MIXER, A MECHANICAL SHOE TYPE PRIMARY SEAL AND A SECONDARY WIPER SEAL

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. VOC emissions from this tank shall not exceed 28.9 pounds in any one day. [District Rule 2201] Federally Enforceable Through Title V Permit
4. VOC emissions from this tank shall not exceed 6,707 pounds in any 12 consecutive month rolling period. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services

N-758-14-5 Aug 30 2015 2:05PM - SCW : Joint Inspection NOT Required

5. The permittee shall maintain records sufficient to demonstrate compliance with each emission limit. These records shall contain each process variable used (e.g., throughput, RVP, etc.) in estimating VOC emissions from this tank and actual process variables (e.g. throughput, RVP, etc.) of this tank. The process variables used in estimating the emissions shall be compared to that of the actual process variables to demonstrate compliance with each emission limit. The permittee may also use EPA's Tanks program (or other District accepted methodologies) with actual process variables to demonstrate compliance with each emission limit. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Fugitive VOC from valves, flanges, connector, pump seals etc., associated with this tank shall not exceed any of the following limits: 0.2 lb/day and 55 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Fugitive VOC emissions from component leaks shall be calculated using component count and appropriate emission factors from "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities", Table IV-1b (Feb 1999) - Marketing Terminal. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Throughput of organic liquid for this tank shall not exceed any of the following limits: 698,136 gallons/day, 20,961,220 gallons/month and 50,952,827 gallons/year based on a 12-month rolling basis. [District Rule 2201] Federally Enforceable Through Title V Permit
9. True vapor pressure (TVP) of the liquid stored in this tank shall be less than 11 psia. [District Rule 4623] Federally Enforceable Through Title V Permit
10. The owner or operator shall determine RVP and the temperature of the organic liquid (except diesel) stored on monthly basis. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
11. This tank shall be equipped with a closure device between the tank shell and roof edge consisting of two seals mounted one above the other; the one below shall be referred to as the primary seal, and the one above shall be referred as the secondary seal. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit
12. The external floating roof shall float on the surface of the stored liquid at all times (i.e., off the roof leg supports) except during the initial fill until the roof is lifted off the leg supports and when the tank is completely emptied and subsequently refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible. Whenever the permittee intends to land the roof on its legs, the permittee shall notify the APCO in writing at least five calendar days prior to performing the work. The tank must be in compliance with this rule before it may land on its legs. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit
13. Gaps between the tank shell and the primary seal shall not exceed 1-1/2 inches. [District Rule 4623] Federally Enforceable Through Title V Permit
14. The cumulative length of all gaps between the tank shell and the primary seal greater than 1/2 inch shall not exceed 10% of the circumference of the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
15. Accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm<sup>2</sup> per meter (10.01 in<sup>2</sup> per foot) of tank diameter, and the width of any gap shall not exceed 3.81 cm (1.5 inches). [40CFR 63.11087(c)] Federally Enforceable Through Title V Permit
16. The cumulative length of all primary seal gaps greater than 1/8 inch shall not exceed 30% of the circumference of the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
17. No continuous gap in the primary seal greater than 1/8 inch wide shall exceed 10% of the tank circumference. [District Rule 4623] Federally Enforceable Through Title V Permit
18. Accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm<sup>2</sup> per meter (1.0 in<sup>2</sup> per foot) of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm (1/2 inch). [District Rule 4623 and 40CFR 63.11087(c)] Federally Enforceable Through Title V Permit
19. If the primary seal used is a metallic shoe, one end of the metallic shoe is to extend into the stored liquid and the other end is to extend a minimum vertical distance of 61 cm (24 inches) above the stored liquid surface. [District Rule 4623 and 40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit

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20. The geometry of the metallic-shoe type seal shall be such that the maximum gap between the shoe and the tank shell shall be no greater than 3 inches for a length of at least 18 inches in the vertical plane above the liquid. [District Rule 4623] Federally Enforceable Through Title V Permit
21. There shall be no holes, tears, or openings in the secondary seal or in the primary seal envelope that surrounds the annular vapor space enclosed by the roof edge, seal fabric, and secondary seal. [District Rule 4623 and 40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
22. The secondary seal shall allow easy insertion of probes of up to 1-1/2 inches in width in order to measure gaps in the primary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
23. The secondary seal shall extend from the roof to the tank shell and shall not be attached to the primary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
24. All openings in the roof used for sampling and gauging, except pressure-vacuum relief valve, shall provide a projection below the liquid surface to prevent belching of liquid and to prevent entrained or formed organic vapor from escaping from the liquid contents of the tank and shall be equipped with a cover, seal or lid that shall be in a closed position at all times, with no visible gaps and be gas tight, except when the device or appurtenance is in use. [District Rule 4623] Federally Enforceable Through Title V Permit
25. The tank shall be in a leak-free condition. The pressure-vacuum relief valve shall be set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in leak-free condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623] Federally Enforceable Through Title V Permit
26. A leak-free condition is defined as a condition without a gas or liquid leak. A gas leak is defined as a reading in excess of 10,000 ppmv as methane, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A liquid leak is defined as a dripping rate of more than three (3) drops per minute. A reading in excess of 10,000 ppmv as methane above background or a liquid leak of greater than three (3) drops per minute is a violation of this permit and Rule 4623 and shall be reported as a deviation, unless this tank is a part of Voluntary Tank Preventive Inspection and Maintenance, and Tank Interior Cleaning Program under section 5.7 of Rule 4623 and complies with all requirements in Table 4 of Rule 4623 for External Floating Roof Tank Preventative Inspection and Maintenance. [District Rule 4623] Federally Enforceable Through Title V Permit
27. Except for automatic bleeder vents, rim vents, and pressure relief vents, each opening in a non-contact external floating roof shall provide a projection below the liquid surface. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit
28. Except for automatic bleeder vents and rim vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid that shall be maintained in a closed position at all times (i.e., no visible gap) except when in actual use. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit
29. Automatic bleeder vents shall be equipped with a gasket and shall be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit
30. Rim vents shall be equipped with a gasket and shall be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit
31. Each emergency roof drain shall be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. The fabric cover must be impermeable if the liquid is drained into the contents of the tanks. [District Rule 4623 and 40 CFR 63.11087(a)] Federally Enforceable Through Title V Permit
32. External floating roof legs shall be equipped with vapor socks or vapor barriers in order to maintain a gas-tight condition so as to prevent VOC emissions from escaping through the roof leg opening. [District Rule 4623] Federally Enforceable Through Title V Permit

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33. All wells and similar fixed projections through the floating roof shall provide a projection below the liquid surface. [District Rule 4623] Federally Enforceable Through Title V Permit
34. The solid guidepole well shall be equipped with a pole wiper and a gasketed cover, seal or lid which shall be in a closed position at all times (i.e., no visible gap) except when the well is in use. [District Rule 4623] Federally Enforceable Through Title V Permit
35. The gap between the pole wiper and the solid guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed 1/2 inch. [District Rule 4623] Federally Enforceable Through Title V Permit
36. The slotted guidepole well on a external floating roof shall be equipped with the following: a sliding cover, a well gasket, a pole sleeve, a pole wiper, and an internal float and float wiper designed to minimize the gap between the float and the well, and provided the gap shall not exceed 1/8 inch; or shall be equipped with a well gasket, a zero gap pole wiper seal and a pole sleeve that projects below the liquid surface. [District Rule 4623] Federally Enforceable Through Title V Permit
37. The gap between the pole wiper and the slotted guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed 1/8 inch. [District Rule 4623] Federally Enforceable Through Title V Permit
38. The permittee of external floating roof tanks shall make the primary seal envelope available for unobstructed inspection by the APCO on an annual basis at locations selected along its circumference at random by the APCO. In the case of riveted tanks with toroid-type seals, a minimum of eight locations shall be made available; in all other cases, a minimum of four locations shall be made available. If the APCO suspects a violation may exist the APCO may require such further unobstructed inspection of the primary seal as may be necessary to determine the seal condition for its entire circumference. [District Rule 4623] Federally Enforceable Through Title V Permit
39. Operator shall perform gap measurements on primary and secondary seals within 60 days of the initial fill and at least once every year thereafter to determine compliance with the requirements of Rule 4623. The actual gap measurements of the floating roof primary and secondary seals shall be recorded. The inspection results shall be submitted to the APCO as specified in Section 6.3.5. [District Rule 4623 and 40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
40. Operator shall also perform gap measurements on primary seals during hydrostatic testing of the vessel. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
41. If unit is out of service for a period of one year or more, subsequent refilling with gasoline shall be considered initial fill in accordance with the conditions of this permit. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
42. Operator shall determine gap widths and gap areas for compliance with 40 CFR 60.113b(b)(2) and (3) in the primary and secondary seals using the following procedure: 1) Measure seal gaps, at one or more floating roof levels when the roof is floating off roof leg supports; 2) Measure seal gaps around entire circumference of the tank in each place where a 0.32 cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the tank wall and measure the circumferential distance of each such location; 3) Total surface area of each gap shall be determined by using probes of various widths to accurately measure the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance; and 4) Add the gap surface area of each gap location for the primary seal and the secondary seal individually. Divide the sum for each seal by the nominal diameter of the tank. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
43. If the seals do not meet the required specifications of 40 CFR 60.113b(b)(4)(i) and (ii), operator shall repair or empty the storage vessel within 45 days of identification. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
44. Operator shall notify the APCO 30 days in advance of any gap measurements required by 40 CFR 63.11092(e)(2) and 40 CFR 60.113b(b) to afford the APCO opportunity to have an observer present. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit

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45. After the tank has been emptied and degassed, if the external floating roof has defects, or the primary seal or secondary seal has holes, tears, or other openings in the seal or seal fabric, the operator shall repair the items as necessary so that none of these conditions exist before filling or refilling the storage vessel with gasoline. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
46. For all visual inspections required by 40 CFR 63.11092(e)(2), the operator shall notify the APCO in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the APCO the opportunity to inspect the storage vessel prior to refilling, except when notification is specifically allowed otherwise by this permit. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
47. If a visual inspection required by 40 CFR 63.11092(e)(2) is not planned and the operator could not have known about the inspection 30 days in advance of refilling the tank, the operator shall notify the APCO at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so it is received by the APCO at least 7 days prior to the refilling. [40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
48. Operator shall record the vessel on which the measurement was performed, date of the seal gap measurement, raw data obtained in the measurement process in accordance with the conditions of this permit. [40 CFR 63.11087(e)] Federally Enforceable Through Title V Permit
49. Within 30 days of the end of each semi-annual period, the operator shall include in the report required by 40 CFR 63.11095(a) the following information regarding gap measurements: the date of measurement, raw data obtained in the measurement process, and all such gap calculations as required by 40 CFR 63.11092(e)(2). [40 CFR 63.11087(e)] Federally Enforceable Through Title V Permit
50. Within 30 days of the end of each semi-annual period, the operator shall include in the report required by 40 CFR 63.11095(a) the following information regarding gap measurements that exceeded 40 CFR 60.113b(4) limits: the date of measurement, raw data obtained in the measurement process, all such gap calculations as required by 40 CFR 63.11092(e)(2), and the date the vessel was emptied or the repairs made and the date of repair. [40 CFR 63.11087(e)] Federally Enforceable Through Title V Permit
51. The permittee shall inspect the primary and secondary seals for compliance with the requirements of Rule 4623 every time this tank is emptied or degassed. Actual gap measurements shall be performed when the liquid level is static but not more than 48 hours after the tank roof is re-floated. [District Rule 4623 and 40 CFR 63.11087(c)] Federally Enforceable Through Title V Permit
52. The permittee shall submit the reports of the floating roof tank inspections to the APCO within five calendar days after the completion of the inspection only for those tanks that failed to meet the applicable requirements of Rule 4623, Sections 5.2 through 5.5. The inspection report for tanks that have been determined to be in compliance with the requirements of Sections 5.2 through 5.5 need not be submitted to the APCO, but the inspection report shall be kept on-site and made available upon request by the APCO. The inspection report shall contain all necessary information to demonstrate compliance with the provisions of Rule 4623. [District Rule 4623] Federally Enforceable Through Title V Permit
53. The permittee shall maintain the records of the external floating roof landing activities that are performed pursuant to Rule 4623, Sections 5.3.1.3 and 5.4.3. The records shall include information on the true vapor pressure (TVP), API gravity, storage temperature, type of organic liquid stored in the tank, the purpose of landing the roof on its legs, the date of roof landing, duration the roof was on its legs, the level or height at which the tank roof was set to land on its legs, and the lowest liquid level in the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
54. The permittee shall maintain records of the volatile organic liquid stored, the period of storage, and TVP of that volatile organic liquid during the respective storage period. TVP shall be determined using the data on the Reid vapor pressure (highest receipt or highest tank sample results) and actual storage temperature. [District Rule 2201] Federally Enforceable Through Title V Permit
55. The permittee shall maintain records of daily, monthly and annual (12-month rolling total) organic liquid throughput in gallons. [District Rule 2201] Federally Enforceable Through Title V Permit

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56. The permittee shall maintain all records required by this permit for a period of at least five years and shall make them readily available for District inspection upon request. [District Rule 4623 and 40 CFR 63.11094(a)] Federally Enforceable Through Title V Permit

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## **APPENDIX III**

**Pre-Project Potential Emissions N-758-14-6**

**EPA's Tanks 4.0.9.d reports**

# TANKS 4.0.9d

## Emissions Report - Detail Format

### Tank Identification and Physical Characteristics

<b>Identification</b>		
User Identification:	STK Tank 18 (EFR - annual)	
City:	Stockton	
State:	California	
Company:	Shell Oil Products US	
Type of Tank:	External Floating Roof Tank	
Description:	Regular gasoline Jan-Dec. RVP 14.	
<b>Tank Dimensions</b>		
Diameter (ft):		60.00
Volume (gallons):		689,136.00
Turnovers:		73.94
<b>Paint Characteristics</b>		
Internal Shell Condition:	Light Rust	
Shell Color/Shade:	White/White	
Shell Condition	Good	
<b>Roof Characteristics</b>		
Type:	Pontoon	
Fitting Category	Detail	
<b>Tank Construction and Rim-Seal System</b>		
Construction:	Welded	
Primary Seal:	Mechanical Shoe	
Secondary Seal	Rim-mounted	
<b>Deck Fitting/Status</b>		
Access Hatch (24-in. Diam.)	Bolted Cover, Gasketed	
Automatic Gauge Float Well/Unbolted Cover	Ungasketed	
Roof Leg (3-in. Diameter)/Adjustable, Center Area	Ungasketed	
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area	Ungasketed	
Vacuum Breaker (10-in. Diam.)	Weighted Mech. Actuation, Gask.	
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper		
Gauge-Hatch/Sample Well (8-in. Diam.)	Weighted Mech. Actuation, Ungask.	

Meteorological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)



# TANKS 4.0.9d

## Emissions Report - Detail Format

### Liquid Contents of Storage Tank

#### STK Tank 18 (EFR - annual) - External Floating Roof Tank Stockton, California

Mixture/Component	Month	Avg.	Min.	Max.	Daily Liquid Surf. Temperature (deg F)	Liquid Bulk Temp (deg F)	Vapor Pressure (psia)	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basic for Vapor Pressure Calculations
Equilon Gasoline RVP 14.0	Jan	55.08	51.49	58.67	61.57	61.57	6.8836	N/A	N/A	N/A	61.0000	Option 2: A=7.04283, B=1573.287, C=208.56
1,2,4-Trimethylbenzene							0.0167	N/A	0.0240	0.0001	82.50	Option 2: A=6.8118, B=1257.84, C=220.74
2,2,4-Trimethylpentane							0.0161	N/A	0.0470	0.0048	120.19	Option 2: A=6.905, B=1211.033, C=220.79
Benzene							1.0172	N/A	0.0120	0.0024	78.11	Option 2: A=6.841, B=1201.53, C=222.65
Cyclohexane							1.0586	N/A	0.0024	0.0005	84.16	Option 2: A=6.876, B=1424.255, C=213.21
Ethylbenzene							0.0913	N/A	0.0120	0.0002	106.17	Option 2: A=6.954, B=1460.793, C=207.78
Hexane (n)							1.6910	N/A	0.0130	0.0043	86.17	Option 2: A=7.009, B=1482.266, C=215.11
Isopropyl benzene							0.0424	N/A	0.0015	0.0000	120.20	Option 2: A=7.04383, B=1573.287, C=208.56
Methyl alcohol							1.2323	N/A	0.0014	0.0003	32.04	Option 2: A=6.8118, B=1257.84, C=220.74
Naphthalene							0.0911	N/A	0.0030	0.0000	128.16	Option 2: A=6.876, B=1424.255, C=213.21
Styrene							0.0503	N/A	0.0008	0.0000	104.15	Option 2: A=6.954, B=1460.793, C=207.78
Toluene							0.2827	N/A	0.0600	0.0033	92.13	Option 2: A=7.14, B=1574.51, C=224.09
Undenified Components							8.5331	N/A	0.7529	0.9830	77.89	Option 2: A=6.954, B=1344.8, C=219.48
Xylenes (Mixed)							0.0753	N/A	0.0700	0.0010	106.17	Option 2: A=7.009, B=1482.266, C=215.11
Equilon Gasoline RVP 14.0	Feb	57.06	53.17	62.75	61.57	61.57	7.2649	N/A	N/A	N/A	61.0000	Option 2: A=7.04383, B=1573.287, C=208.56
1,2,4-Trimethylbenzene							0.0188	N/A	0.0240	0.0001	82.50	Option 2: A=6.8118, B=1257.84, C=220.74
2,2,4-Trimethylpentane							0.0915	N/A	0.0470	0.0049	120.19	Option 2: A=6.905, B=1211.033, C=220.79
Benzene							1.1033	N/A	0.0120	0.0025	78.11	Option 2: A=6.841, B=1201.53, C=222.65
Cyclohexane							1.1459	N/A	0.0024	0.0005	84.16	Option 2: A=6.876, B=1424.255, C=213.21
Ethylbenzene							0.1010	N/A	0.0130	0.0002	106.17	Option 2: A=6.954, B=1460.793, C=207.78
Hexane (n)							1.8140	N/A	0.0130	0.0044	86.17	Option 2: A=7.009, B=1482.266, C=215.11
Isopropyl benzene							0.0473	N/A	0.0015	0.0000	120.20	Option 2: A=7.04383, B=1573.287, C=208.56
Methyl alcohol							1.3519	N/A	0.0014	0.0004	32.04	Option 2: A=6.8118, B=1257.84, C=220.74
Naphthalene							0.0013	N/A	0.0030	0.0000	128.16	Option 2: A=6.876, B=1424.255, C=213.21
Styrene							0.0698	N/A	0.0008	0.0000	104.15	Option 2: A=6.954, B=1460.793, C=207.78
Toluene							0.3097	N/A	0.0600	0.0035	92.13	Option 2: A=7.14, B=1574.51, C=224.09
Undenified Components							9.0025	N/A	0.7529	0.9825	77.89	Option 2: A=6.954, B=1344.8, C=219.48
Xylenes (Mixed)							0.0841	N/A	0.0700	0.0011	106.17	Option 2: A=7.009, B=1482.266, C=215.11
Equilon Gasoline RVP 14.0	Mar	60.22	54.36	66.07	61.57	61.57	7.5756	N/A	N/A	N/A	61.0000	Option 2: A=7.04383, B=1573.287, C=208.56
1,2,4-Trimethylbenzene							0.0206	N/A	0.0240	0.0001	82.50	Option 2: A=6.8118, B=1257.84, C=220.74
2,2,4-Trimethylpentane							0.0994	N/A	0.0470	0.0050	120.19	Option 2: A=6.905, B=1211.033, C=220.79
Benzene							1.1749	N/A	0.0120	0.0025	78.11	Option 2: A=6.841, B=1201.53, C=222.65
Cyclohexane							1.2166	N/A	0.0024	0.0005	84.16	Option 2: A=6.876, B=1424.255, C=213.21
Ethylbenzene							0.1094	N/A	0.0130	0.0002	106.17	Option 2: A=6.954, B=1460.793, C=207.78
Hexane (n)							1.9242	N/A	0.0130	0.0045	86.17	Option 2: A=7.009, B=1482.266, C=215.11
Isopropyl benzene							0.0515	N/A	0.0015	0.0000	120.20	Option 2: A=7.04383, B=1573.287, C=208.56
Methyl alcohol							1.4520	N/A	0.0014	0.0004	32.04	Option 2: A=6.8118, B=1257.84, C=220.74
Naphthalene							0.0015	N/A	0.0030	0.0000	128.16	Option 2: A=6.876, B=1424.255, C=213.21
Styrene							0.0724	N/A	0.0008	0.0000	104.15	Option 2: A=6.954, B=1460.793, C=207.78
Toluene							0.3324	N/A	0.0600	0.0036	92.13	Option 2: A=7.14, B=1574.51, C=224.09
Undenified Components							9.3849	N/A	0.7529	0.9821	77.89	Option 2: A=6.954, B=1344.8, C=219.48
Xylenes (Mixed)							0.0911	N/A	0.0700	0.0011	106.17	Option 2: A=7.009, B=1482.266, C=215.11
Equilon Gasoline RVP 14.0	Apr	63.26	55.98	70.54	61.57	61.57	8.0107	N/A	N/A	N/A	61.0000	Option 2: A=7.04383, B=1573.287, C=208.56
1,2,4-Trimethylbenzene							0.0233	N/A	0.0240	0.0001	82.50	Option 2: A=6.8118, B=1257.84, C=220.74
2,2,4-Trimethylpentane							0.0939	N/A	0.0470	0.0052	120.19	Option 2: A=6.905, B=1211.033, C=220.79
Benzene							1.2775	N/A	0.0120	0.0026	78.11	Option 2: A=6.841, B=1201.53, C=222.65
Cyclohexane							1.3224	N/A	0.0024	0.0005	84.16	Option 2: A=6.876, B=1424.255, C=213.21

Ethylbenzene	0.1215	N/A	N/A	106.1700	0.0120	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (n)	2.0815	N/A	N/A	86.1700	0.0130	0.0046	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene	0.0517	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Methyl alcohol	1.5669	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=228.13
Naphthalene	0.0017	N/A	N/A	128.1600	0.0030	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene	0.0804	N/A	N/A	104.1500	0.0008	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.3651	N/A	N/A	92.1300	0.0600	0.0037	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components	9.9200	N/A	N/A	60.6264	0.7529	0.3815	77.89	Option 2: A=7.009, B=1462.266, C=215.11
Xylenes (Mixed)	0.1013	N/A	N/A	106.1700	0.0700	0.0012	106.17	Option 4: RVP=14, ASTM Slope=3
Equilon Gasoline RVP 14.0	8.5669	N/A	N/A	61.0000	0.0240	0.0001	82.50	Option 2: A=7.04383, B=1573.267, C=208.56
1,2,4-Trimethylbenzene	0.0270	N/A	N/A	120.1900	0.0470	0.0064	120.19	Option 2: A=6.8118, B=1257.84, C=220.74
2,2,4-Trimethylpentane	0.7284	N/A	N/A	114.2300	0.0120	0.0027	114.23	Option 2: A=6.905, B=1211.033, C=220.78
Benzene	1.4173	N/A	N/A	78.1100	0.0024	0.0006	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Cyclohexane	1.4635	N/A	N/A	84.1600	0.0120	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Ethylbenzene	0.1384	N/A	N/A	106.1700	0.0130	0.0047	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Hexane (n)	2.2945	N/A	N/A	86.1700	0.0015	0.0000	120.20	Option 2: A=7.897, B=1474.08, C=228.13
Isopropyl benzene	0.0664	N/A	N/A	120.2000	0.0014	0.0004	32.04	Option 2: A=6.8181, B=1585.86, C=184.32
Methyl alcohol	1.7668	N/A	N/A	32.0400	0.0030	0.0000	128.16	Option 2: A=7.14, B=1574.51, C=224.09
Naphthalene	0.0021	N/A	N/A	128.1600	0.0008	0.0000	104.15	Option 2: A=6.954, B=1344.8, C=219.48
Styrene	0.0917	N/A	N/A	104.1500	0.0600	0.0039	92.13	Option 2: A=7.009, B=1462.266, C=215.11
Toluene	0.4103	N/A	N/A	92.1300	0.7529	0.3807	77.89	Option 4: RVP=14, ASTM Slope=3
Unidentified Components	10.6281	N/A	N/A	60.6111	0.0700	0.0013	106.17	Option 2: A=7.04383, B=1573.267, C=208.56
Xylenes (Mixed)	0.1155	N/A	N/A	106.1700	0.0240	0.0001	82.50	Option 2: A=6.8118, B=1257.84, C=220.74
Equilon Gasoline RVP 14.0	9.0584	N/A	N/A	61.0000	0.0470	0.0056	114.23	Option 2: A=6.905, B=1211.033, C=220.79
1,2,4-Trimethylbenzene	0.0306	N/A	N/A	120.1900	0.0120	0.0028	78.11	Option 2: A=6.841, B=1201.53, C=222.65
2,2,4-Trimethylpentane	0.7967	N/A	N/A	114.2300	0.0024	0.0006	84.16	Option 2: A=6.975, B=1424.255, C=213.21
Benzene	1.5449	N/A	N/A	78.1100	0.0130	0.0048	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Cyclohexane	1.5922	N/A	N/A	84.1600	0.0015	0.0000	120.20	Option 2: A=7.897, B=1474.08, C=228.13
Ethylbenzene	0.1542	N/A	N/A	106.1700	0.0030	0.0004	32.04	Option 2: A=6.8181, B=1585.86, C=184.32
Hexane (n)	2.4680	N/A	N/A	86.1700	0.0008	0.0000	128.16	Option 2: A=7.14, B=1574.51, C=224.09
Isopropyl benzene	0.0746	N/A	N/A	120.2000	0.0600	0.0040	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Methyl alcohol	1.9820	N/A	N/A	32.0400	0.7529	0.3801	77.89	Option 2: A=7.009, B=1462.266, C=215.11
Naphthalene	0.0025	N/A	N/A	128.1600	0.0030	0.0001	82.50	Option 4: RVP=14, ASTM Slope=3
Styrene	0.1023	N/A	N/A	104.1500	0.0470	0.0057	114.23	Option 2: A=7.04383, B=1573.267, C=208.56
Toluene	0.4620	N/A	N/A	92.1300	0.0120	0.0028	78.11	Option 2: A=6.8118, B=1257.84, C=220.74
Unidentified Components	11.2564	N/A	N/A	60.5960	0.0024	0.0006	84.16	Option 2: A=6.905, B=1211.033, C=220.79
Xylenes (Mixed)	0.1288	N/A	N/A	106.1700	0.0120	0.0003	106.17	Option 2: A=6.841, B=1201.53, C=222.65
Equilon Gasoline RVP 14.0	9.4129	N/A	N/A	61.0000	0.0030	0.0000	120.20	Option 2: A=6.975, B=1424.255, C=213.21
1,2,4-Trimethylbenzene	0.0329	N/A	N/A	120.1900	0.0015	0.0000	120.20	Option 2: A=6.876, B=1171.17, C=224.41
2,2,4-Trimethylpentane	0.8396	N/A	N/A	114.2300	0.0014	0.0004	32.04	Option 2: A=6.954, B=1344.8, C=219.48
Benzene	1.6250	N/A	N/A	78.1100	0.0030	0.0000	128.16	Option 2: A=7.009, B=1462.266, C=215.11
Cyclohexane	1.6728	N/A	N/A	84.1600	0.0040	0.0001	82.50	Option 4: RVP=14, ASTM Slope=3
Ethylbenzene	0.1642	N/A	N/A	106.1700	0.0024	0.0006	84.16	Option 2: A=7.04383, B=1573.267, C=208.56
Hexane (n)	2.6098	N/A	N/A	86.1700	0.0120	0.0028	78.11	Option 2: A=6.8118, B=1257.84, C=220.74
Isopropyl benzene	0.0798	N/A	N/A	120.2000	0.0030	0.0003	106.17	Option 2: A=6.905, B=1211.033, C=220.79
Methyl alcohol	2.0952	N/A	N/A	32.0400	0.0040	0.0006	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Naphthalene	0.0027	N/A	N/A	128.1600	0.0130	0.0048	86.17	Option 2: A=6.975, B=1424.255, C=213.21
Styrene	0.1091	N/A	N/A	104.1500	0.0015	0.0000	120.20	Option 2: A=6.876, B=1171.17, C=224.41
Toluene	0.4784	N/A	N/A	92.1300	0.0014	0.0004	32.04	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components	11.0423	N/A	N/A	60.5901	0.0030	0.0000	128.16	Option 2: A=7.897, B=1474.08, C=228.13
Xylenes (Mixed)	0.1373	N/A	N/A	106.1700	0.0008	0.0000	104.15	Option 2: A=6.8181, B=1585.86, C=184.32
Equilon Gasoline RVP 14.0	9.2801	N/A	N/A	61.0000	0.9900	0.0041	92.13	Option 2: A=7.14, B=1574.51, C=224.09
1,2,4-Trimethylbenzene	0.0319	N/A	N/A	120.1900	0.7529	0.3815	77.89	Option 2: A=6.954, B=1344.8, C=219.48
2,2,4-Trimethylpentane	0.8214	N/A	N/A	114.2300	0.0014	0.0001	82.50	Option 4: RVP=14, ASTM Slope=3
Benzene	1.5910	N/A	N/A	78.1100	0.0240	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
Cyclohexane	1.6386	N/A	N/A	84.1600	0.0470	0.0056	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Ethylbenzene	0.1589	N/A	N/A	106.1700	0.0120	0.0028	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Hexane (n)	2.5576	N/A	N/A	86.1700	0.0024	0.0006	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Isopropyl benzene	0.0776	N/A	N/A	120.2000	0.0030	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Methyl alcohol	2.0494	N/A	N/A	32.0400	0.0130	0.0048	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Naphthalene	0.0026	N/A	N/A	128.1600	0.0015	0.0000	120.20	Option 2: A=6.954, B=1344.8, C=219.48
Styrene	0.1062	N/A	N/A	104.1500	0.0014	0.0004	32.04	Option 2: A=6.8181, B=1585.86, C=184.32
Toluene	0.4672	N/A	N/A	92.1300	0.0030	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09

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# TANKS 4.0.9d

## Emissions Report - Detail Format

### Detail Calculations (AP-42)

#### STK Tank 18 (EFR - annual) - External Floating Roof Tank

#### Stockton, California

Month	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	156,4148	172,6758	200,7100	231,9347	281,3175	308,3015	295,5140	273,7728	225,7145	194,1336	153,6830	150,2822
Seal Factor A (lb-mole/yr):	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Seal Factor B (lb-mole/yr (mph)²):	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
Average Wind Speed (mph):	6.7000	6.9000	7.7000	8.3000	9.2000	9.2000	8.2000	7.7000	7.1000	5.4000	5.4000	6.4000
Seal-related Wind Speed Exponent:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Value of Vapor Pressure Function:	0.1564	0.1685	0.1788	0.1940	0.2155	0.2362	0.2497	0.2639	0.2775	0.2914	0.3059	0.3199
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.8936	7.2649	7.5756	8.0107	8.5869	9.0584	9.4128	9.2801	8.6891	8.2151	7.3890	6.9705
Tank Diameter (ft):	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000
Vapor Molecular Weight (lb/lb-mole):	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Product Factor:												
Withdrawal Losses (lb):	13,3468	13,3468	13,3468	13,3468	13,3468	13,3468	13,3468	13,3468	13,3468	13,3468	13,3468	13,3468
Net Throughput (gal/yr):	4,246,068,9160	4,246,068,9160	4,246,068,9160	4,246,068,9160	4,246,068,9160	4,246,068,9160	4,246,068,9160	4,246,068,9160	4,246,068,9160	4,246,068,9160	4,246,068,9160	4,246,068,9160
Shell Clingage Factor (lb/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000
Tank Diameter (ft):	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000
Roof Filling Losses (lb):	198,1342	220,7531	255,4432	316,8840	401,3201	439,8146	401,8144	363,4410	308,0319	242,6068	187,1756	187,8274
Value of Vapor Pressure Function:	0.1554	0.1685	0.1788	0.1940	0.2155	0.2362	0.2497	0.2639	0.2775	0.2914	0.3059	0.3199
Vapor Molecular Weight (lb/lb-mole):	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Filling Loss Fact. (lb-mole/yr):	248,2911	257,7506	293,1182	321,3452	368,3441	368,3441	316,5414	283,1182	266,3340	236,9412	213,3690	236,9412
Average Wind Speed (mph):	6.7000	6.9000	7.7000	8.3000	9.2000	9.2000	8.2000	7.7000	7.1000	5.4000	5.4000	6.4000
Total Losses (lb):	357,8958	406,7757	480,5050	582,1655	695,9845	761,4631	710,6752	650,5806	560,0931	450,0872	354,2155	351,4734
Roof Filling/Status				Quantity		KF (lb-mole/yr)	KF (lb-mole/yr)	KF (lb-mole/yr)		m	Losses (lb)	
Access Hatch (24-in. Diam.)/Roller Cover, Gasketed	1			1		1.80	0.00	0.00		0.00	19,5409	
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1			1		14.00	5.40	5.40		1.10	584,7658	
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	7			7		0.82	0.53	0.53		0.14	127,2678	
Roof Leg (3-in. Diameter)/Adjustable, Perimeter Area, Ungasketed	9			9		2.80	0.37	0.37		0.91	405,3292	
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1			1		6.20	1.20	1.20		0.94	146,0143	
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper	1			1		21.00	7.60	7.60		1.80	2,228,0924	
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Ungask.	1			1		2.30	0.60	0.60		0.60	28,0898	

## TANKS 4.0.9d

Emissions Report - Detail Format  
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

STK Tank 18 (EFR - annual) - External Floating Roof Tank  
Stockton, California

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawal Loss	Deck Fitting Loss	Deck Seam Loss	
Equilon Gasoline RVP 14.0	2,657.48	160.16	3,534.25	0.00	6,351.89
1,2,4-Trimethylbenzene	0.26	3.84	0.35	0.00	4.45
2,2,4-Trimethylpentane	14.07	7.53	18.74	0.00	40.33
Benzene	7.00	1.92	9.32	0.00	18.25
Cyclohexane	1.45	0.38	1.93	0.00	3.76
Ethylbenzene	0.68	1.92	0.90	0.00	3.50
Hexane (n)	12.31	2.08	16.40	0.00	30.79
Isopropyl benzene	0.04	0.24	0.05	0.00	0.33
Methyl alcohol	1.03	0.22	1.37	0.00	2.63
Naphthalene	0.00	0.48	0.00	0.00	0.49
Styrene	0.03	0.13	0.04	0.00	0.20
Toluene	10.08	9.61	13.43	0.00	33.12
Unidentified Components	2,607.25	120.59	3,467.32	0.00	6,195.16
Xylenes (Mixed)	3.29	11.21	4.39	0.00	18.89

# TANKS 4.0.9d

## Emissions Report - Detail Format

### Tank Identification and Physical Characteristics

<b>Identification</b>	
User Identification:	STK Tank 18 (EFR - max daily)
City:	Stockton
State:	California
Company:	Shell Oil Products US
Type of Tank:	External Floating Roof Tank
Description:	Regular gasoline Jan-Dec. RVP 14.
<b>Tank Dimensions</b>	
Diameter (ft):	60.00
Volume (gallons):	689,136.00
Turnovers:	365.00
<b>Paint Characteristics</b>	
Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
<b>Roof Characteristics</b>	
Type:	Pontoon
Fitting Category	Detail
<b>Tank Construction and Rim-Seal System</b>	
Construction:	Welded
Primary Seal:	Mechanical Shoe
Secondary Seal	Rim-mounted
<b>Deck Fitting/Status</b>	
Access Hatch (24-in. Diam.)	Bolted Cover, Gasketed
Automatic Gauge Float Well/Unbolted Cover	Ungasketed
Roof Leg (3-in. Diameter)/Adjustable, Center Area	Ungasketed
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area	Ungasketed
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper	
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Ungask.	

Meteorological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)

# TANKS 4.0.9d

## Emissions Report - Detail Format

### Liquid Contents of Storage Tank

STK Tank 18 (EFR - max daily) - External Floating Roof Tank  
Stockton, California

Mixture/Component	Month	Avg.	Min.	Max.	Daily Liquid Surf. Temperature (deg F)	Liquid Bulk Temp (deg F)	Vapor Pressure (psia)	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Equilon Gasoline RVP 14.0	Jan	55.08	51.49	58.67		61.57						
1,2,4-Trimethylbenzene					5.8535	N/A	N/A	61.0000	0.0240	0.0001	82.50	Option 4: RVP=14, ASTM Slope=3
2,2,4-Trimethylpentane					0.0167	N/A	N/A	120.1900	0.0470	0.0048	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene					0.5161	N/A	N/A	114.2300	0.0120	0.0024	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Cyclohexane					1.0172	N/A	N/A	78.1100	0.0024	0.0005	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene					1.0586	N/A	N/A	84.1600	0.0120	0.0002	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Hexane (n)					0.0913	N/A	N/A	106.1700	0.0130	0.0043	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Isopropyl benzene					1.6810	N/A	N/A	86.1700	0.0130	0.0043	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Methyl alcohol					0.0424	N/A	N/A	120.2300	0.0015	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene					1.2329	N/A	N/A	128.1600	0.0014	0.0003	128.16	Option 2: A=7.897, B=1474.08, C=229.13
Styrene					0.0503	N/A	N/A	104.1500	0.0008	0.0000	104.15	Option 2: A=6.8181, B=1585.86, C=184.32
Toluene					0.2827	N/A	N/A	92.1300	0.0600	0.0033	92.13	Option 2: A=7.14, B=1574.51, C=224.08
Unidentified Components					8.5331	N/A	N/A	60.6580	0.7529	0.9830	77.89	Option 2: A=6.954, B=1344.8, C=219.48
Xylenes (Mixed)					0.0759	N/A	N/A	106.1700	0.0700	0.0010	106.17	Option 2: A=7.009, B=1462.266, C=215.11
Equilon Gasoline RVP 14.0	Feb	57.96	53.17	62.75		61.57						
1,2,4-Trimethylbenzene					0.0188	N/A	N/A	120.1900	0.0240	0.0001	82.50	Option 4: RVP=14, ASTM Slope=3
2,2,4-Trimethylpentane					0.5615	N/A	N/A	114.2300	0.0470	0.0049	114.23	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene					1.1033	N/A	N/A	78.1100	0.0120	0.0025	78.11	Option 2: A=6.8118, B=1257.84, C=220.74
Cyclohexane					1.1459	N/A	N/A	84.1600	0.0024	0.0005	84.16	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene					0.1010	N/A	N/A	106.1700	0.0120	0.0002	106.17	Option 2: A=6.841, B=1201.53, C=222.65
Hexane (n)					1.8140	N/A	N/A	86.1700	0.0130	0.0044	86.17	Option 2: A=6.975, B=1424.255, C=213.21
Isopropyl benzene					0.0473	N/A	N/A	120.2300	0.0015	0.0000	120.20	Option 2: A=6.876, B=1171.17, C=224.41
Methyl alcohol					1.3519	N/A	N/A	128.1600	0.0014	0.0004	128.16	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene					0.0013	N/A	N/A	104.1500	0.0030	0.0000	104.15	Option 2: A=7.897, B=1474.08, C=229.13
Styrene					0.6666	N/A	N/A	92.1300	0.0600	0.0035	92.13	Option 2: A=6.8181, B=1585.86, C=184.32
Toluene					6.3087	N/A	N/A	60.6471	0.7529	0.9825	77.89	Option 2: A=7.14, B=1574.51, C=224.08
Unidentified Components					0.0841	N/A	N/A	106.1700	0.0700	0.0011	106.17	Option 2: A=6.954, B=1344.8, C=219.48
Xylenes (Mixed)					7.5796	N/A	N/A	61.0000	0.0240	0.0001	82.50	Option 2: A=7.009, B=1462.266, C=215.11
Equilon Gasoline RVP 14.0	Mar	60.22	54.36	66.07		61.57						
1,2,4-Trimethylbenzene					0.0206	N/A	N/A	120.1900	0.0240	0.0001	120.19	Option 4: RVP=14, ASTM Slope=3
2,2,4-Trimethylpentane					0.5954	N/A	N/A	114.2300	0.0470	0.0050	114.23	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene					1.1749	N/A	N/A	78.1100	0.0120	0.0025	78.11	Option 2: A=6.8118, B=1257.84, C=220.74
Cyclohexane					1.2189	N/A	N/A	84.1600	0.0024	0.0005	84.16	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene					0.1094	N/A	N/A	106.1700	0.0120	0.0002	106.17	Option 2: A=6.841, B=1201.53, C=222.65
Hexane (n)					1.9242	N/A	N/A	86.1700	0.0130	0.0045	86.17	Option 2: A=6.975, B=1424.255, C=213.21
Isopropyl benzene					0.0515	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.876, B=1171.17, C=224.41
Methyl alcohol					1.4520	N/A	N/A	128.1600	0.0014	0.0004	128.16	Option 2: A=6.963, B=1460.793, C=207.78
Naphthalene					0.0015	N/A	N/A	104.1500	0.0030	0.0000	104.15	Option 2: A=7.897, B=1474.08, C=229.13
Styrene					0.0724	N/A	N/A	92.1300	0.0600	0.0035	92.13	Option 2: A=6.8181, B=1585.86, C=184.32
Toluene					9.3524	N/A	N/A	60.6383	0.7529	0.9821	77.89	Option 2: A=7.14, B=1574.51, C=224.08
Unidentified Components					0.0911	N/A	N/A	106.1700	0.0700	0.0011	106.17	Option 2: A=6.954, B=1344.8, C=219.48
Xylenes (Mixed)					8.0107	N/A	N/A	61.0000	0.0240	0.0001	82.50	Option 2: A=7.009, B=1462.266, C=215.11
Equilon Gasoline RVP 14.0	Apr	63.26	55.98	70.54		61.57						
1,2,4-Trimethylbenzene					0.0233	N/A	N/A	120.1900	0.0240	0.0001	120.19	Option 4: RVP=14, ASTM Slope=3
2,2,4-Trimethylpentane					0.6339	N/A	N/A	114.2300	0.0470	0.0052	114.23	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene					1.2775	N/A	N/A	78.1100	0.0120	0.0025	78.11	Option 2: A=6.8118, B=1257.84, C=220.74
Cyclohexane					1.3224	N/A	N/A	84.1600	0.0024	0.0005	84.16	Option 2: A=6.905, B=1211.033, C=220.79

## TANKS 4.0 Report

Ethylbenzene	0.1215	N/A	N/A	106.1700	0.0120	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (n)	2.0815	N/A	N/A	86.1700	0.0130	0.0046	86.17	Option 2: A=6.976, B=1171.17, C=224.41
Isopropyl benzene	0.0577	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Methyl alcohol	1.5969	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Naphthalene	0.0017	N/A	N/A	128.1600	0.0000	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene	0.0804	N/A	N/A	104.1500	0.0006	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.3651	N/A	N/A	92.1300	0.0600	0.0037	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components	9.9200	N/A	N/A	60.6284	0.7529	0.9815	77.89	
Xylenes (Mixed)	0.1013	N/A	N/A	106.1700	0.0700	0.0012	106.17	Option 2: A=7.009, B=1462.266, C=215.11
Equilon Gasoline RVP 14.0	8.5869	N/A	N/A	61.0000			82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene	0.0270	N/A	N/A	120.1900	0.0240	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane	0.7284	N/A	N/A	114.2300	0.0470	0.0004	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene	1.4173	N/A	N/A	78.1100	0.0120	0.0027	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Cyclohexane	1.4635	N/A	N/A	84.1600	0.0024	0.0006	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene	0.1384	N/A	N/A	106.1700	0.0120	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (n)	2.2945	N/A	N/A	86.1700	0.0130	0.0047	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene	0.0654	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Methyl alcohol	1.7568	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Naphthalene	0.0021	N/A	N/A	128.1600	0.0030	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene	0.0517	N/A	N/A	104.1500	0.0008	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.4103	N/A	N/A	92.1300	0.0500	0.0039	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components	10.6281	N/A	N/A	60.6111	0.7529	0.9807	77.89	
Xylenes (Mixed)	0.1155	N/A	N/A	106.1700	0.0700	0.0013	106.17	Option 2: A=7.009, B=1462.266, C=215.11
Equilon Gasoline RVP 14.0	9.0864	N/A	N/A	61.0000			82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene	0.0306	N/A	N/A	120.1900	0.0240	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane	0.7967	N/A	N/A	114.2300	0.0470	0.0006	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene	1.5449	N/A	N/A	78.1100	0.0120	0.0028	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Cyclohexane	1.5922	N/A	N/A	84.1600	0.0024	0.0006	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene	0.1542	N/A	N/A	106.1700	0.0120	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (n)	2.4880	N/A	N/A	86.1700	0.0130	0.0048	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene	0.0746	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Methyl alcohol	1.9520	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Naphthalene	0.0025	N/A	N/A	128.1600	0.0030	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene	0.1023	N/A	N/A	104.1500	0.0008	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.4520	N/A	N/A	92.1300	0.0600	0.0040	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components	11.2564	N/A	N/A	60.5980	0.7529	0.9801	77.89	
Xylenes (Mixed)	0.1288	N/A	N/A	106.1700	0.0700	0.0013	106.17	Option 2: A=7.009, B=1462.266, C=215.11
Equilon Gasoline RVP 14.0	9.4128	N/A	N/A	61.0000			82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene	0.0329	N/A	N/A	120.1900	0.0240	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane	0.8396	N/A	N/A	114.2300	0.0470	0.0007	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene	1.6250	N/A	N/A	78.1100	0.0120	0.0028	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Cyclohexane	1.6728	N/A	N/A	84.1600	0.0024	0.0006	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene	0.1642	N/A	N/A	106.1700	0.0120	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (n)	2.6388	N/A	N/A	86.1700	0.0130	0.0049	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene	0.0798	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Methyl alcohol	2.0582	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Naphthalene	0.0027	N/A	N/A	128.1600	0.0030	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene	0.1081	N/A	N/A	104.1500	0.0008	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.4784	N/A	N/A	92.1300	0.0600	0.0041	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components	11.6423	N/A	N/A	60.5901	0.7529	0.9797	77.89	
Xylenes (Mixed)	0.1373	N/A	N/A	106.1700	0.0700	0.0014	106.17	Option 2: A=7.009, B=1462.266, C=215.11
Equilon Gasoline RVP 14.0	9.2601	N/A	N/A	61.0000			82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene	0.0319	N/A	N/A	120.1900	0.0240	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane	0.8214	N/A	N/A	114.2300	0.0470	0.0006	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene	1.5910	N/A	N/A	78.1100	0.0120	0.0028	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Cyclohexane	1.6396	N/A	N/A	84.1600	0.0024	0.0006	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene	0.1969	N/A	N/A	106.1700	0.0120	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (n)	2.5576	N/A	N/A	86.1700	0.0130	0.0048	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene	0.0776	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Methyl alcohol	2.0494	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Naphthalene	0.0026	N/A	N/A	128.1600	0.0030	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene	0.1062	N/A	N/A	104.1500	0.0008	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.4672	N/A	N/A	92.1300	0.0600	0.0041	92.13	Option 2: A=6.954, B=1344.8, C=219.48



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TANKS 4.0.9d  
Emissions Report - Detail Format  
Detail Calculations (AP-42)

STK Tank 18 (EFR - max daily) - External Floating Roof Tank  
Stockton, California

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	155,4146	172,6758	200,7100	231,9347	281,3175	308,3075	295,5140	273,7728	248,7145	194,1336	153,5800	150,2592
Seal Factor A (lb-mole/yr):	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Seal Factor B (lb-mole/yr) (mph):	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
Average Wind Speed (mph):	6.7000	6.9000	7.7000	8.3000	9.2000	9.2000	8.2000	7.7000	7.1000	5.4000	5.8000	5.4000
Soil-related Wind Speed Exponent:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Value of Vapor Pressure Function:	0.1564	0.1685	0.1788	0.1940	0.2155	0.2382	0.2497	0.2439	0.2275	0.2014	0.1726	0.1559
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.8556	7.2649	7.5756	8.0107	8.5893	9.0984	9.4128	9.2801	8.8891	8.2151	7.3890	6.8705
Tank Diameter (ft):	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000
Vapor Molecular Weight (lb/lb-mole):	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrift Losses (lb):	65,8881	65,8881	65,8881	65,8881	65,8881	65,8881	65,8881	65,8881	65,8881	65,8881	65,8881	65,8881
Net Throughput (gal/day):	20,361,220.0000	20,361,220.0000	20,361,220.0000	20,361,220.0000	20,361,220.0000	20,361,220.0000	20,361,220.0000	20,361,220.0000	20,361,220.0000	20,361,220.0000	20,361,220.0000	20,361,220.0000
Shell Coefficient Factor (lb/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000
Tank Diameter (ft):	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000
Roof Fitting Losses (lb):	198,1342	220,7531	285,4482	316,8840	401,3201	438,8148	401,8144	363,4410	306,0318	243,6058	187,1755	187,8274
Value of Vapor Pressure Function:	0.1564	0.1685	0.1788	0.1940	0.2155	0.2382	0.2497	0.2439	0.2275	0.2014	0.1726	0.1559
Vapor Molecular Weight (lb/lb-mole):	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact (lb-mole/yr):	249,2911	257,7306	293,1182	321,3452	366,3441	386,3441	316,5414	293,1182	266,3340	236,9412	213,3680	233,9412
Average Wind Speed (mph):	6.7000	6.9000	7.7000	8.3000	9.2000	9.2000	8.2000	7.7000	7.1000	5.4000	5.8000	5.4000
Total Losses (lb):	428,4371	459,3170	533,0483	614,7068	748,5258	814,0544	783,2165	703,1019	612,6344	502,8285	405,7595	404,0147
Roof Fitting/Status:	Access Hatch (24-in. Diam./Bolted Cover, Gasketed)											
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	1	1	1	1	1	1	1	1	1	1	1
Roof Leg (3-in. Diameter/Adjustable, Center Area, Ungasketed)	7	7	7	7	7	7	7	7	7	7	7	7
Vacuum Breaker (10-in. Diam./Weighted Mach. Actuation, Gask.)	9	9	9	9	9	9	9	9	9	9	9	9
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Water Gauge-Hatch/Sample Well (8-in. Diam./Weighted Mech. Actuation, Ungask.)	1	1	1	1	1	1	1	1	1	1	1	1
Losses (lb):	19,5408	20,5408	21,5408	22,5408	23,5408	24,5408	25,5408	26,5408	27,5408	28,5408	29,5408	30,5408

## TANKS 4.0.9d

Emissions Report - Detail Format  
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

STK Tank 18 (EFR - max daily) - External Floating Roof Tank  
Stockton, California

Components	Losses(lbs)					Total Emissions
	Rim Seal Loss	Withdrawal Loss	Deck Fitting Loss	Deck Seam Loss		
Equilon Gasoline RVP 14.0	2,657.48	790.66	3,534.25	0.00		6,982.39
1,2,4-Trimethylbenzene	0.26	18.98	0.35	0.00		19.59
2,2,4-Trimethylpentane	14.07	37.16	18.74	0.00		69.97
Benzene	7.00	9.49	9.32	0.00		25.81
Cyclohexane	1.45	1.90	1.93	0.00		5.27
Ethylbenzene	0.68	9.49	0.90	0.00		11.07
Hexane (n)	12.31	10.28	16.40	0.00		38.99
Isopropyl benzene	0.04	1.19	0.05	0.00		1.28
Methyl alcohol	1.03	1.11	1.37	0.00		3.51
Naphthalene	0.00	2.37	0.00	0.00		2.38
Styrene	0.03	0.63	0.04	0.00		0.70
Toluene	10.08	47.44	13.43	0.00		70.95
Unidentified Components	2,607.25	595.29	3,467.32	0.00		6,669.86
Xylenes (Mixed)	3.29	55.35	4.39	0.00		63.02



## TANKS 4.0.9d

Emissions Report - Detail Format  
Total Emissions Summaries - All Tanks in ReportEmissions Report for: January, February, March, April, May, June, July, August, September, October, November,  
December

Tank Identification			Losses (lbs)
STK Tank 18 (DEFR - annual)	Shell Oil Products US	Domed External Floating Roof Tank	1,417.11
STK Tank 18 (DEFR - max daily)	Shell Oil Products US	Domed External Floating Roof Tank	2,047.61
STK Tank 18 (EFR - annual)	Shell Oil Products US	External Floating Roof Tank	6,351.89
STK Tank 18 (EFR - max daily)	Shell Oil Products US	External Floating Roof Tank	6,982.39
Total Emissions for all Tanks:			16,799.00

## **APPENDIX IV**

**Post-Project Potential Emissions N-758-14-6**

**EPA's Tanks 4.0.9.d reports**

# TANKS 4.0.9d

## Emissions Report - Detail Format

### Tank Identification and Physical Characteristics

**Identification**  
 User Identification: STK Tank 18 (DEFR - annual)  
 City: Stockton  
 State: California  
 Company: Shell Oil Products US  
 Type of Tank: Domed External Floating Roof Tank  
 Description: Tank 18 Conversion to a Domed EFR. Assume Gasoline RVP 14 Jan - Dec

**Tank Dimensions**  
 Diameter (ft): 60.00  
 Volume (gallons): 689,136.00  
 Turnovers: 73.94

**Paint Characteristics**  
 Internal Shell Condition: Light Rust  
 Shell Color/Shade: White/White  
 Shell Condition: Good

**Roof Characteristics**  
 Type: Pontoon  
 Fitting Category: Detail

**Tank Construction and Rim-Seal System**  
 Construction: Welded  
 Primary Seal: Mechanical Shoe  
 Secondary Seal: Rim-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	9
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed	7

Meteorological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)

## TANKS 4.0.9d

Emissions Report - Detail Format  
Liquid Contents of Storage TankSTK Tank 18 (DEFR - annual) - Domed External Floating Roof Tank  
Stockton, California

Mixture/Component	Month	Avg.	Min.	Max.	Daily Liquid Surf. Temperature (deg F)	Liquid Bulk Temp (deg F)	Vapor Pressure (psia)	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Equilon Gasoline RVP 14.0	Jan	55.08	51.49	58.67	61.57	61.57	6.8536	N/A	0.0240	0.0001	82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene							0.0187	N/A	0.0470	0.0048	120.19	Option 2: A=6.8118, B=1257.84, C=220.74
2,2,4-Trimethylpentane							0.5161	N/A	0.0172	0.0024	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene							1.0172	N/A	0.0024	0.0005	78.11	Option 2: A=6.8118, B=1257.84, C=220.74
Cyclohexane							1.0586	N/A	0.0024	0.0005	84.16	Option 2: A=6.8118, B=1257.84, C=220.74
Ethylbenzene							0.6913	N/A	0.0120	0.0002	106.17	Option 2: A=6.8118, B=1257.84, C=220.74
Hexane (n)							1.5810	N/A	0.0130	0.0043	86.17	Option 2: A=6.8118, B=1257.84, C=220.74
Isopropyl benzene							0.0424	N/A	0.0015	0.0000	120.20	Option 2: A=6.8118, B=1257.84, C=220.74
Methyl alcohol							1.2329	N/A	0.0014	0.0003	32.04	Option 2: A=6.8118, B=1257.84, C=220.74
Naphthalene							0.0011	N/A	0.0030	0.0000	128.16	Option 2: A=6.8118, B=1257.84, C=220.74
Styrene							0.0603	N/A	0.0008	0.0000	104.15	Option 2: A=6.8118, B=1257.84, C=220.74
Toluene							0.2827	N/A	0.0600	0.0033	92.13	Option 2: A=6.8118, B=1257.84, C=220.74
Unidentified Components							8.5331	N/A	0.7529	0.9830	77.89	Option 2: A=6.8118, B=1257.84, C=220.74
Xylenes (Mixed)							0.0759	N/A	0.0700	0.0010	106.17	Option 2: A=6.8118, B=1257.84, C=220.74
Equilon Gasoline RVP 14.0	Feb	57.96	53.17	62.75	61.57	61.57	7.2649	N/A	0.0240	0.0001	82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene							0.0188	N/A	0.0470	0.0049	120.19	Option 2: A=6.8118, B=1257.84, C=220.74
2,2,4-Trimethylpentane							0.5615	N/A	0.0120	0.0025	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene							1.1033	N/A	0.0024	0.0005	78.11	Option 2: A=6.8118, B=1257.84, C=220.74
Cyclohexane							1.1459	N/A	0.0024	0.0005	84.16	Option 2: A=6.8118, B=1257.84, C=220.74
Ethylbenzene							0.1010	N/A	0.0120	0.0002	106.17	Option 2: A=6.8118, B=1257.84, C=220.74
Hexane (n)							1.8140	N/A	0.0130	0.0044	86.17	Option 2: A=6.8118, B=1257.84, C=220.74
Isopropyl benzene							0.0473	N/A	0.0015	0.0000	120.20	Option 2: A=6.8118, B=1257.84, C=220.74
Methyl alcohol							1.3519	N/A	0.0014	0.0004	32.04	Option 2: A=6.8118, B=1257.84, C=220.74
Naphthalene							0.0013	N/A	0.0030	0.0000	128.16	Option 2: A=6.8118, B=1257.84, C=220.74
Styrene							0.0688	N/A	0.0008	0.0000	104.15	Option 2: A=6.8118, B=1257.84, C=220.74
Toluene							0.3097	N/A	0.0600	0.0035	92.13	Option 2: A=6.8118, B=1257.84, C=220.74
Unidentified Components							9.0025	N/A	0.7529	0.9825	77.89	Option 2: A=6.8118, B=1257.84, C=220.74
Xylenes (Mixed)							0.0841	N/A	0.0700	0.0011	106.17	Option 2: A=6.8118, B=1257.84, C=220.74
Equilon Gasoline RVP 14.0	Mar	60.22	54.36	66.07	61.57	61.57	7.5756	N/A	0.0240	0.0001	82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene							0.0206	N/A	0.0470	0.0050	120.19	Option 2: A=6.8118, B=1257.84, C=220.74
2,2,4-Trimethylpentane							0.5994	N/A	0.0120	0.0025	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene							1.1749	N/A	0.0024	0.0005	78.11	Option 2: A=6.8118, B=1257.84, C=220.74
Cyclohexane							1.2195	N/A	0.0024	0.0005	84.16	Option 2: A=6.8118, B=1257.84, C=220.74
Ethylbenzene							0.1094	N/A	0.0120	0.0002	106.17	Option 2: A=6.8118, B=1257.84, C=220.74
Hexane (n)							1.9242	N/A	0.0130	0.0045	86.17	Option 2: A=6.8118, B=1257.84, C=220.74
Isopropyl benzene							0.0515	N/A	0.0015	0.0000	120.20	Option 2: A=6.8118, B=1257.84, C=220.74
Methyl alcohol							1.4520	N/A	0.0014	0.0004	32.04	Option 2: A=6.8118, B=1257.84, C=220.74
Naphthalene							0.0015	N/A	0.0030	0.0000	128.16	Option 2: A=6.8118, B=1257.84, C=220.74
Styrene							0.0724	N/A	0.0008	0.0000	104.15	Option 2: A=6.8118, B=1257.84, C=220.74
Toluene							0.3324	N/A	0.0600	0.0036	92.13	Option 2: A=6.8118, B=1257.84, C=220.74
Unidentified Components							9.3849	N/A	0.7529	0.9821	77.89	Option 2: A=6.8118, B=1257.84, C=220.74
Xylenes (Mixed)							0.0911	N/A	0.0700	0.0011	106.17	Option 2: A=6.8118, B=1257.84, C=220.74
Equilon Gasoline RVP 14.0	Apr	63.26	55.98	70.54	61.57	61.57	8.0107	N/A	0.0240	0.0001	82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene							0.0233	N/A	0.0470	0.0052	120.19	Option 2: A=6.8118, B=1257.84, C=220.74
2,2,4-Trimethylpentane							0.6539	N/A	0.0120	0.0026	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene							1.2715	N/A	0.0024	0.0005	78.11	Option 2: A=6.8118, B=1257.84, C=220.74
Cyclohexane							1.3224	N/A	0.0024	0.0005	84.16	Option 2: A=6.8118, B=1257.84, C=220.74



Ethylbenzene	0.1215	N/A	N/A	106.1700	0.0120	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (n)	2.0615	N/A	N/A	86.1700	0.0150	0.0045	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene	0.0577	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.953, B=1460.793, C=207.78
Methyl alcohol	1.5959	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=228.13
Naphthalene	0.0017	N/A	N/A	128.1600	0.0030	0.0000	128.16	Option 2: A=6.9191, B=1585.86, C=184.32
Styrene	0.0804	N/A	N/A	104.1500	0.0008	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.3651	N/A	N/A	92.1300	0.0600	0.0037	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components	9.9200	N/A	N/A	60.6264	0.7529	0.9815	77.89	
Xylenes (Mixed)	0.1013	N/A	N/A	106.1700	0.0700	0.0012	106.17	Option 2: A=7.009, B=1462.266, C=215.11
Equilon Gasoline RVP 14.0	8.3989	N/A	N/A	61.0000	0.0240	0.0001	82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene	0.0270	N/A	N/A	120.1900	0.0470	0.0054	120.19	Option 2: A=7.0493, B=1573.267, C=208.55
2,2,4-Trimethylpentane	0.7264	N/A	N/A	114.2300	0.0120	0.0027	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene	1.4173	N/A	N/A	78.1100	0.0024	0.0006	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Cyclohexane	1.4635	N/A	N/A	84.1600	0.0024	0.0006	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene	0.1384	N/A	N/A	106.1700	0.0120	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (n)	2.2294	N/A	N/A	86.1700	0.0130	0.0047	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene	0.0654	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Methyl alcohol	1.7958	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=228.13
Naphthalene	0.0021	N/A	N/A	128.1600	0.0030	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene	0.0917	N/A	N/A	104.1500	0.0008	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.4103	N/A	N/A	92.1300	0.0600	0.0039	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components	10.8281	N/A	N/A	60.6111	0.7529	0.9807	77.89	
Xylenes (Mixed)	0.1155	N/A	N/A	106.1700	0.0700	0.0013	106.17	Option 2: A=7.009, B=1462.266, C=215.11
Equilon Gasoline RVP 14.0	9.0954	N/A	N/A	61.0000	0.0240	0.0001	82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene	0.0306	N/A	N/A	120.1900	0.0470	0.0056	120.19	Option 2: A=7.0493, B=1573.267, C=208.55
2,2,4-Trimethylpentane	0.7957	N/A	N/A	114.2300	0.0120	0.0028	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene	1.5449	N/A	N/A	78.1100	0.0024	0.0006	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Cyclohexane	1.5922	N/A	N/A	84.1600	0.0024	0.0006	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene	0.1542	N/A	N/A	106.1700	0.0120	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (n)	2.4980	N/A	N/A	86.1700	0.0130	0.0048	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene	0.0746	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Methyl alcohol	1.9820	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=228.13
Naphthalene	0.0025	N/A	N/A	128.1600	0.0030	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene	0.1023	N/A	N/A	104.1500	0.0008	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.4520	N/A	N/A	92.1300	0.0600	0.0040	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components	11.2564	N/A	N/A	60.5960	0.7529	0.9901	77.89	
Xylenes (Mixed)	0.1288	N/A	N/A	106.1700	0.0700	0.0013	106.17	Option 2: A=7.009, B=1462.266, C=215.11
Equilon Gasoline RVP 14.0	9.4128	N/A	N/A	61.0000	0.0240	0.0001	82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene	0.0329	N/A	N/A	120.1900	0.0470	0.0057	120.19	Option 2: A=7.0493, B=1573.267, C=208.55
2,2,4-Trimethylpentane	0.8396	N/A	N/A	114.2300	0.0120	0.0028	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene	1.6250	N/A	N/A	78.1100	0.0024	0.0006	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Cyclohexane	1.6728	N/A	N/A	84.1600	0.0024	0.0006	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene	0.1642	N/A	N/A	106.1700	0.0120	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (n)	2.6088	N/A	N/A	86.1700	0.0130	0.0049	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene	0.0798	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Methyl alcohol	2.0992	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=228.13
Naphthalene	0.0027	N/A	N/A	128.1600	0.0030	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene	0.1091	N/A	N/A	104.1500	0.0008	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.4764	N/A	N/A	92.1300	0.0600	0.0041	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components	11.6423	N/A	N/A	60.5901	0.7529	0.9797	77.89	
Xylenes (Mixed)	0.1373	N/A	N/A	106.1700	0.0700	0.0014	106.17	Option 2: A=7.009, B=1462.266, C=215.11
Equilon Gasoline RVP 14.0	9.2801	N/A	N/A	61.0000	0.0240	0.0001	82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene	0.0319	N/A	N/A	120.1900	0.0470	0.0056	120.19	Option 2: A=7.0493, B=1573.267, C=208.55
2,2,4-Trimethylpentane	0.8214	N/A	N/A	114.2300	0.0120	0.0028	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene	1.5910	N/A	N/A	78.1100	0.0024	0.0006	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Cyclohexane	1.6365	N/A	N/A	84.1600	0.0024	0.0006	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene	0.1599	N/A	N/A	106.1700	0.0120	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (n)	2.5576	N/A	N/A	86.1700	0.0130	0.0048	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene	0.0776	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Methyl alcohol	2.0494	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=228.13
Naphthalene	0.0026	N/A	N/A	128.1600	0.0030	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene	0.1062	N/A	N/A	104.1500	0.0008	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.4672	N/A	N/A	92.1300	0.0600	0.0041	92.13	Option 2: A=6.954, B=1344.8, C=219.48

[illegible]

# TANKS 4.0.9d

## Emissions Report - Detail Format

### Detail Calculations (AP-42)

#### STK Tank 18 (DEFR - annual) - Domed External Floating Roof Tank Stockton, California

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	28.6125	30.8350	32.7245	35.5002	39.4370	43.2188	48.6880	44.6369	41.6382	36.8608	31.5807	28.1378
Seal Factor A (lb-mole/ft <sup>2</sup> -yr):	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Seal Factor B (lb-mole/ft <sup>2</sup> -yr (mph) <sup>0.5</sup> ):	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
Average Wind Speed (mph):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Seal-related Wind Speed Exponent:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Value of Vapor Pressure Function:	0.1564	0.1885	0.1788	0.1940	0.2155	0.2382	0.2497	0.2439	0.2275	0.2014	0.1726	0.1559
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	8.8836	7.2649	7.5756	8.0107	8.5889	9.0984	9.4128	9.2801	8.8891	8.2151	7.3850	6.8705
Tank Diameter (ft):	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000
Vapor Molecular Weight (lb/lb-mole):	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Product Factor:												
Withdrawal Losses (lb):	13.3468	13.3468	13.3468	13.3468	13.3468	13.3468	13.3468	13.3468	13.3468	13.3468	13.3468	13.3468
Net Throughput (gal/mo):	4,246,068.9160	4,246,068.9160	4,246,068.9160	4,246,068.9160	4,246,068.9160	4,246,068.9160	4,246,068.9160	4,246,068.9160	4,246,068.9160	4,246,068.9160	4,246,068.9160	4,246,068.9160
Seal Leakage Factor (lb/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000
Tank Diameter (ft):	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000	60.0000
Roof Fitting Losses (lb):	53.2589	57.3959	60.9129	66.0797	73.4077	80.4488	85.0618	83.0655	77.5912	68.6123	58.7840	53.1200
Value of Vapor Pressure Function:	0.1564	0.1885	0.1788	0.1940	0.2155	0.2382	0.2497	0.2439	0.2275	0.2014	0.1726	0.1559
Vapor Molecular Weight (lb/lb-mole):	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000	61.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact (lb-mole/yr):	67.0100	67.0100	67.0100	67.0100	67.0100	67.0100	67.0100	67.0100	67.0100	67.0100	67.0100	67.0100
Average Wind Speed (mph):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Losses (lb):	95.2182	101.5776	105.8842	114.9267	126.1915	137.0156	144.1067	141.0703	132.4843	118.8199	103.7116	95.0046
Roof Fitting Status:												
Access Hatch (24-in. Diam./Bolted Cover, Gasketed)	1					1.80		0.00		0.00		13.5408
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1					14.00		5.40		1.10		170.9818
Vacuum Breaker (10-in. Diam./Weighted Mech. Actuation, Gask.	1					6.20		1.20		0.94		75.7205
Stuffed Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper	1					21.60		7.90		1.80		255.4728
Gauge-Hatch/Sample Well (8-in. Diam./Weighted Mech. Actuation, Gask.	1					0.47		6.02		0.97		5.7401
Roof Leg (3-in. Diameter/Adjustable, Pontoon Area, Ungasketed	9					2.00		0.37		0.91		219.8338
Roof Leg (3-in. Diameter/Adjustable, Center Area, Ungasketed	7					0.82		0.53		0.14		70.1028

## TANKS 4.0.9d

Emissions Report - Detail Format  
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

STK Tank 18 (DEFR - annual) - Domed External Floating Roof Tank  
Stockton, California

Components	Losses(lbs)					Total Emissions
	Rim Seal Loss	Withdrawal Loss	Deck Fitting Loss	Deck Seam Loss		
Equilon Gasoline RVP 14.0	439.28	160.16	817.67	0.00		1,417.11
1,2,4-Trimethylbenzene	0.04	3.84	0.08	0.00		3.97
2,2,4-Trimethylpentane	2.32	7.53	4.31	0.00		14.15
Benzene	1.15	1.92	2.15	0.00		5.22
Cyclohexane	0.24	0.38	0.44	0.00		1.07
Ethylbenzene	0.11	1.92	0.21	0.00		2.24
Hexane (n)	2.03	2.08	3.78	0.00		7.89
Isopropyl benzene	0.01	0.24	0.01	0.00		0.26
Methyl alcohol	0.17	0.22	0.32	0.00		0.71
Naphthalene	0.00	0.43	0.00	0.00		0.48
Styrene	0.00	0.13	0.01	0.00		0.14
Toluene	1.68	9.61	3.08	0.00		14.35
Unidentified Components	431.01	120.59	802.28	0.00		1,353.88
Xylenes (Mixed)	0.54	11.21	1.01	0.00		12.76

# TANKS 4.0.9d Emissions Report - Detail Format Tank Identification and Physical Characteristics

<b>Identification</b>		
User Identification:	STK Tank 18 (DEFR - max daily)	
City:	Stockton	
State:	California	
Company:	Shell Oil Products US	
Type of Tank:	Domed External Floating Roof Tank	
Description:	Tank 18 Conversion to a Domed EFR, Assume Gasoline RVP 14 Jan - Dec	
<b>Tank Dimensions</b>		
Diameter (ft):	60.00	
Volume (gallons):	689,136.00	
Turnovers:	365.00	
<b>Paint Characteristics</b>		
Internal Shell Condition:	Light Rust	
Shell Color/Shade:	White/White	
Shell Condition	Good	
<b>Roof Characteristics</b>		
Type:	Pontoon	
Fitting Category	Detail	
<b>Tank Construction and Rim-Seal System</b>		
Construction:	Welded	
Primary Seal:	Mechanical Shoe	
Secondary Seal	Rim-mounted	
<b>Deck Fitting/Status</b>		
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed		1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed		1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.		1
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper		1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.		1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Ungasketed		9
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Ungasketed		7

Meteorological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)

# TANKS 4.0.9d

## Emissions Report - Detail Format

### Liquid Contents of Storage Tank

STK Tank 18 (DEFR - max daily) - Domed External Floating Roof Tank  
Stockton, California

Mixture/Component	Daily Liquid Surf. Temperature (deg F)			Vapor Pressure (psia)		Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
	Month	Avg.	Min.	Avg.	Max.					
Equilon Gasoline RVP 14.0	Jan	55.08	51.49	58.87	61.57	61.57	0.0240	0.0001	82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene							0.0240	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane							0.0470	0.0048	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene							0.0172	0.0024	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Cyclohexane							0.0586	0.0005	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene							0.0813	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (n)							0.0810	0.0043	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene							0.0424	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Methyl alcohol							1.2329	0.0003	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Naphthalene							0.0011	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene							0.0603	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene							0.0827	0.0033	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components							8.5331	0.0010	106.17	Option 2: A=7.009, B=1462.266, C=215.11
Xylenes (Mixed)							7.2649	0.0001	82.50	Option 4: RVP=14, ASTM Slope=3
Equilon Gasoline RVP 14.0	Feb	57.96	53.17	62.75	61.57	61.57	0.0240	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1,2,4-Trimethylbenzene							0.0470	0.0048	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
2,2,4-Trimethylpentane							0.0172	0.0025	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Benzene							0.0586	0.0005	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Cyclohexane							0.0813	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Ethylbenzene							0.1010	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (n)							0.0470	0.0044	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene							0.0473	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Methyl alcohol							1.3519	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Naphthalene							0.0013	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene							0.0688	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene							0.3097	0.0035	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components							9.0025	0.0025	77.89	Option 2: A=7.009, B=1462.266, C=215.11
Xylenes (Mixed)							0.0841	0.0011	106.17	Option 4: RVP=14, ASTM Slope=3
Equilon Gasoline RVP 14.0	Mar	60.22	54.36	66.07	61.57	61.57	0.0240	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1,2,4-Trimethylbenzene							0.0470	0.0050	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
2,2,4-Trimethylpentane							0.0172	0.0025	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Benzene							0.0586	0.0005	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Cyclohexane							0.0813	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Ethylbenzene							0.1094	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (n)							0.0924	0.0045	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene							0.0515	0.0000	120.20	Option 2: A=6.963, B=1460.793, C=207.78
Methyl alcohol							1.4520	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Naphthalene							0.0015	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene							0.0724	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene							0.3324	0.0039	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components							9.3849	0.0021	77.89	Option 2: A=7.009, B=1462.266, C=215.11
Xylenes (Mixed)							0.0911	0.0011	106.17	Option 4: RVP=14, ASTM Slope=3
Equilon Gasoline RVP 14.0	Apr	63.26	55.98	70.54	61.57	61.57	0.0233	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1,2,4-Trimethylbenzene							0.0470	0.0052	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
2,2,4-Trimethylpentane							0.0172	0.0026	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Benzene							0.0586	0.0005	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Cyclohexane							0.0813	0.0002	106.17	Option 2: A=6.975, B=1424.255, C=213.21

Ethylbenzene	0.1215	N/A	N/A	106.1700	0.0120	0.0022	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (+)	2.0815	N/A	N/A	86.1700	0.0130	0.0046	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene	0.0577	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.983, B=1460.793, C=207.78
Methyl alcohol	1.5969	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Naphthalene	0.0017	N/A	N/A	128.1600	0.0030	0.0000	128.16	Option 2: A=6.8161, B=1585.86, C=184.32
Styrene	0.0804	N/A	N/A	104.1500	0.0009	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.3651	N/A	N/A	92.1300	0.0600	0.0037	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Undenified Components	9.9200	N/A	N/A	59.6264	0.7529	0.9815	77.89	
Xylenes (Mixed)	0.1013	N/A	N/A	106.1700	0.0700	0.0032	106.17	Option 2: A=7.009, B=1462.266, C=215.11
Equilon Gasoline RVP 14.0	8.5869	N/A	N/A	61.0000		82.50	82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene	0.0270	N/A	N/A	120.1900	0.0240	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane	0.7284	N/A	N/A	114.2300	0.0470	0.0054	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene	1.4173	N/A	N/A	78.1100	0.0120	0.0027	78.11	Option 2: A=6.905, B=1211.033, C=220.78
Cyclohexane	1.4635	N/A	N/A	84.1600	0.0024	0.0006	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene	0.1384	N/A	N/A	106.1700	0.0120	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (+)	2.2945	N/A	N/A	86.1700	0.0130	0.0047	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene	0.0664	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.983, B=1460.793, C=207.78
Methyl alcohol	1.7668	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Naphthalene	0.0021	N/A	N/A	128.1600	0.0030	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene	0.0917	N/A	N/A	104.1500	0.0008	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.4103	N/A	N/A	92.1300	0.0600	0.0039	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Undenified Components	10.8281	N/A	N/A	60.6111	0.7529	0.9807	77.89	
Xylenes (Mixed)	0.1155	N/A	N/A	106.1700	0.0700	0.0013	106.17	Option 2: A=7.009, B=1462.266, C=215.11
Equilon Gasoline RVP 14.0	8.0684	N/A	N/A	61.0000		82.50	82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene	0.0306	N/A	N/A	120.1900	0.0240	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane	0.7967	N/A	N/A	114.2300	0.0470	0.0056	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene	1.5449	N/A	N/A	78.1100	0.0120	0.0028	78.11	Option 2: A=6.905, B=1211.033, C=220.78
Cyclohexane	1.5922	N/A	N/A	84.1600	0.0024	0.0006	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene	0.1542	N/A	N/A	106.1700	0.0120	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (+)	2.4880	N/A	N/A	86.1700	0.0130	0.0048	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene	0.0746	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.983, B=1460.793, C=207.78
Methyl alcohol	1.9820	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Naphthalene	0.0025	N/A	N/A	128.1600	0.0030	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene	0.1023	N/A	N/A	104.1500	0.0008	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.4520	N/A	N/A	92.1300	0.0600	0.0040	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Undenified Components	11.2564	N/A	N/A	60.9960	0.7529	0.9801	77.89	
Xylenes (Mixed)	0.1288	N/A	N/A	106.1700	0.0700	0.0013	106.17	Option 2: A=7.009, B=1462.266, C=215.11
Equilon Gasoline RVP 14.0	9.4128	N/A	N/A	61.0000		82.50	82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene	0.0329	N/A	N/A	120.1900	0.0240	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane	0.8395	N/A	N/A	114.2300	0.0470	0.0057	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene	1.6250	N/A	N/A	78.1100	0.0120	0.0028	78.11	Option 2: A=6.905, B=1211.033, C=220.78
Cyclohexane	1.6728	N/A	N/A	84.1600	0.0024	0.0006	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene	0.1642	N/A	N/A	106.1700	0.0120	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (+)	2.6068	N/A	N/A	86.1700	0.0130	0.0049	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene	0.0798	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.983, B=1460.793, C=207.78
Methyl alcohol	2.0862	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Naphthalene	0.0027	N/A	N/A	128.1600	0.0030	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene	0.1081	N/A	N/A	104.1500	0.0008	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.4794	N/A	N/A	92.1300	0.0600	0.0041	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Undenified Components	11.6423	N/A	N/A	60.9901	0.7529	0.9797	77.89	
Xylenes (Mixed)	0.1373	N/A	N/A	106.1700	0.0700	0.0014	106.17	Option 2: A=7.009, B=1462.266, C=215.11
Equilon Gasoline RVP 14.0	9.2801	N/A	N/A	61.0000		82.50	82.50	Option 4: RVP=14, ASTM Slope=3
1,2,4-Trimethylbenzene	0.0319	N/A	N/A	120.1900	0.0240	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane	0.8214	N/A	N/A	114.2300	0.0470	0.0056	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene	1.5910	N/A	N/A	78.1100	0.0120	0.0028	78.11	Option 2: A=6.905, B=1211.033, C=220.78
Cyclohexane	1.6386	N/A	N/A	84.1600	0.0024	0.0006	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene	0.1599	N/A	N/A	106.1700	0.0120	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (+)	2.5576	N/A	N/A	86.1700	0.0130	0.0048	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene	0.0776	N/A	N/A	120.2000	0.0015	0.0000	120.20	Option 2: A=6.983, B=1460.793, C=207.78
Methyl alcohol	2.0494	N/A	N/A	32.0400	0.0014	0.0004	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Naphthalene	0.0026	N/A	N/A	128.1600	0.0030	0.0000	128.16	Option 2: A=6.8181, B=1585.86, C=184.32
Styrene	0.1062	N/A	N/A	104.1500	0.0008	0.0000	104.15	Option 2: A=7.14, B=1574.51, C=224.09
Toluene	0.4672	N/A	N/A	92.1300	0.0600	0.0041	92.13	Option 2: A=6.954, B=1344.8, C=219.48





**STK Tank 18 (DEFR - max daily) - Domed External Floating Roof Tank**  
**Stockton, California**

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	28,6125	30,8350	32,7245	35,5002	39,4370	43,2198	45,6390	44,6398	41,6352	36,8608	31,6807	28,5378
Seal Factor A (lb-mole/yr):	0,6000	0,6000	0,6000	0,6000	0,6000	0,6000	0,6000	0,6000	0,6000	0,6000	0,6000	0,6000
Seal Factor B (lb-mole/yr (mph)*n):	0,4000	0,4000	0,4000	0,4000	0,4000	0,4000	0,4000	0,4000	0,4000	0,4000	0,4000	0,4000
Average Wind Speed (mph):	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Seal-related Wind Speed Exponent:	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000
Value of Vapor Pressure Function:	0,1654	0,1685	0,1788	0,1940	0,2155	0,2352	0,2497	0,2438	0,2275	0,2014	0,1728	0,1559
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6,8836	7,2649	7,5756	8,0107	8,5869	9,0694	9,4129	9,2601	8,8991	8,2161	7,3890	6,8705
Tank Diameter (ft):	60,0000	60,0000	60,0000	60,0000	60,0000	60,0000	60,0000	60,0000	60,0000	60,0000	60,0000	60,0000
Vapor Molecular Weight (lb/lb-mole):	61,0000	61,0000	61,0000	61,0000	61,0000	61,0000	61,0000	61,0000	61,0000	61,0000	61,0000	61,0000
Product Factor:	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000
Withdrawal Losses (lb):	65,8881	65,8881	65,8881	65,8881	65,8881	65,8881	65,8881	65,8881	65,9881	65,8881	65,8881	65,8881
Tank Throughput (gal/mo):	20,361	220,000000,961	220,000000,961	220,000000,961	220,000000,961	220,000000,961	220,000000,961	220,000000,961	220,000000,961	220,000000,961	220,000000,961	220,000000,961
Seal Charge Factor (lb/yr/1000 sqft):	0,0015	0,0015	0,0015	0,0015	0,0015	0,0015	0,0015	0,0015	0,0015	0,0015	0,0015	0,0015
Average Organic Liquid Density (lb/gal):	5,6000	5,6000	5,6000	5,6000	5,6000	5,6000	5,6000	5,6000	5,6000	5,6000	5,6000	5,6000
Tank Diameter (ft):	60,0000	60,0000	60,0000	60,0000	60,0000	60,0000	60,0000	60,0000	60,0000	60,0000	60,0000	60,0000
Roof Fitting Losses (lb):	53,2589	57,3959	60,6129	66,0797	73,4077	80,4489	85,0518	83,0885	77,5012	69,6123	58,7840	53,1200
Value of Vapor Pressure Function:	0,1954	0,1995	0,1789	0,1940	0,2155	0,2352	0,2497	0,2438	0,2275	0,2014	0,1728	0,1559
Vapor Molecular Weight (lb/lb-mole):	61,0000	61,0000	61,0000	61,0000	61,0000	61,0000	61,0000	61,0000	61,0000	61,0000	61,0000	61,0000
Product Factor:	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000
Tot. Roof Fitting Loss Fact. (lb-mole/yr):	67,0100	67,0100	67,0100	67,0100	67,0100	67,0100	67,0100	67,0100	67,0100	67,0100	67,0100	67,0100
Average Wind Speed (mph):	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Total Losses (lb):	147,7595	154,1189	159,5255	167,4680	178,7328	189,9593	196,6479	193,6115	185,0256	171,3612	156,2529	147,5459
Roof Fitting Status:												
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	Quantity	1				kF <sub>at</sub> (lb-mole/yr)	kF <sub>at</sub> (lb-mole/yr) * n	Losses(lb)				
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1					1,80	0,00	19,5408				
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1					14,00	5,40	1,10	170,9818			
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Whip	1					5,20	1,20	0,94	75,7205			
Gauge-Helco/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1					21,00	7,50	1,80	258,4728			
Roof Leg (34-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	9					0,47	0,02	0,97	5,7401			
Roof Leg (34-in. Diameter)/Adjustable, Pontoon Area, Ungasketed	7					2,00	0,33	0,91	29,8338			
Roof Leg (34-in. Diameter)/Adjustable, Center Area, Ungasketed	9					0,82	0,53	0,14	70,1026			

## TANKS 4.0.9d

Emissions Report - Detail Format  
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

STK Tank 18 (DEFR - max daily) - Domed External Floating Roof Tank  
Stockton, California

Components	Losses(lbs)					Total Emissions
	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss		
Equilon Gasoline RVP 14.0	439.28	790.66	817.67	0.00		2,047.61
1,2,4-Trimethylbenzene	0.04	18.98	0.08	0.00		19.10
2,2,4-Trimethylpentane	2.32	37.16	4.31	0.00		43.79
Benzene	1.15	9.49	2.15	0.00		12.79
Cyclohexane	0.24	1.90	0.44	0.00		2.58
Ethylbenzene	0.11	9.49	0.21	0.00		9.81
Hexane (n)	2.03	10.28	3.78	0.00		16.08
Isopropyl benzene	0.01	1.19	0.01	0.00		1.20
Methyl alcohol	0.17	1.11	0.32	0.00		1.59
Naphthalene	0.00	2.37	0.00	0.00		2.37
Styrene	0.00	0.63	0.01	0.00		0.65
Toluene	1.68	47.44	3.08	0.00		52.18
Unidentified Components	431.01	595.29	802.28	0.00		1,828.58
Xylenes (Mixed)	0.54	56.35	1.01	0.00		56.89

## **APPENDIX V**

### **Compliance Certification**

**San Joaquin Valley  
Unified Air Pollution Control District**

**TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM**

**I. TYPE OF PERMIT ACTION** (Check appropriate box)

☐ SIGNIFICANT PERMIT MODIFICATION  
☒ MINOR PERMIT MODIFICATION

☐ ADMINISTRATIVE  
AMENDMENT

COMPANY NAME: Equilon Enterprises, LLC dba Shell Oil Products US		FACILITY ID: N- 758
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility		
2. Owner's Name:		
3. Agent to the Owner:		

**II. COMPLIANCE CERTIFICATION** (Read each statement carefully and initial all circles for confirmation):

- ☒ Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- ☒ Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- ☒ Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- ☒ Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

  
\_\_\_\_\_  
Signature of Responsible Official

7/9/15  
\_\_\_\_\_  
Date

**Darin Bratsman**

\_\_\_\_\_  
Name of Responsible Official (please print)

**Manager Distribution Operations US, Shell Trading & Supply Americas**

\_\_\_\_\_  
Title of Responsible Official (please print)

## **APPENDIX VI**

EPA Document –  
Applicability Determination Index (ADI) 1000021  
(External Floating Roof Tank Enclosed with Fixed Roof)

Keith Overcash, Director  
Division of Air Quality North Carolina  
Department of Environment & Natural Resources  
1641 Mail Service Center  
Raleigh, North Carolina 27699-1641

Dear Mr. Overcash:

We have received a request from TransMontaigne Operating Company LP (TOC) for a determination concerning the applicability of New Source Performance Standards (NSPS) Subpart Kb - "Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984." TOC requests a determination concerning the application of Subpart Kb provisions for external floating roof (EFR) tanks which have been enclosed with a fixed roof at the company's Selma, North Carolina bulk gasoline terminal. Based on our review, we have determined that the Subpart Kb requirements for internal floating roof (IFR) tanks in Section 60.112b(a)(1) apply to the enclosed EFR tanks. The requirements in Section 60.112b(a)(2) for EFR tanks no longer apply to the enclosed tanks.

The terms EFR and IFR are not defined in Subpart Kb. However, an EFR tank is described in Section 60.112b(a)(2) as a tank with a pontoon-type or double-deck type cover that rests on the liquid surface in a vessel and must be equipped with a closure device consisting of two seals. An IFR tank is described in Section 60.112b(a)(1) as a tank with a fixed roof in combination with an IFR that is equipped with a closure device. As indicated by TOC, North Carolina Administrative Code, Title 15A, Section 02D.0927(f) requires the owner or operator of a bulk gasoline terminal to install a self-supporting roof, such as a geodesic dome, on each external floating roof tank with an inside diameter of 100 feet or less used to store gasoline. In order to comply with the State regulation, EFR tanks subject to Subpart Kb at the TOC facility are required to be enclosed with a fixed roof. For EFR tanks that are enclosed with a fixed roof, TOC requests from the Environmental Protection Agency (EPA) a determination whether the requirements for EFR tanks in Section 60.112b(a)(2) or the requirements for IFR tanks in Section 112b(a)(1) apply, or if requirements for both EFR and IFR tanks are applicable.

In absence of defined terms in Section 60.111b of Subpart Kb, the plain reading of IFR at Section 60.112b(a)(1) is taken - "a fixed roof in combination with an internal floating roof." The requirement for a fixed roof with an internal floating roof does not predicate which roof was in place first, or if it matters that the IFR tank was once an EFR tank. Also, as indicated in the preamble of the proposed Subpart Kb standard (49 FR 29705, July 23, 1984) - "As previously stated, external floating roof vessels are open to the atmosphere in that they have no fixed roof. Because of this, it is technologically impossible to equip these vessels with a closed vent system. It is possible to equip these vessels with fixed roofs. If this is done, the vessel would be an internal floating roof vessel..."

As indicated by TOC, Section 60.113b(b)(1) requires owners/operators of EFR tanks to determine the gap areas and maximum gap widths between the primary seal and the wall of the

storage vessel and between the secondary seal and the wall of the storage vessel. While these seal gap measurements may be conducted when EFR tanks are not covered, the measurements cannot be performed when a self-supporting roof is placed on the tank since access to perform the measurements is not possible. Therefore, we have determined that an EFR tank which is enclosed by the installation of a fixed roof meets the Subpart Kb description of an IFR tank and is subject to the requirements for IFR tanks. The enclosed EFR tanks are no longer subject to the Subpart Kb requirements for EFR tanks.

This determination was coordinated with EPA's Office of Compliance. If there are any questions regarding this letter, please contact Keith Goff of the Region 4 staff at (404) 562-9137.

Sincerely,

Kenneth R. Lapierre  
Acting Director  
Air, Pesticides, and Toxics  
Management Division

cc: James J. Cesario, TOC

Patrick Butler, NC DENR, Raleigh Regional Office

Marcia Mia, Office of Compliance